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AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

EVENT-CENTERED SCHEDULING PROGRAM: THE NEED FOR PERT IN C-141 ISO INSPECTION MANAGEMENT

MAJOR KENT A. MUELLER 88-1925

"insights into tomorrow"

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REPORT NUMBER 88-1925

TITLE EVENT-CENTERED SCHEDULING PROGRAM: THE NEED FOR PERT IN C-141 ISO INSPECTION MANAGEMENT

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Scheduled inspections, specifically the C-141 Isochronal Major, consume a significant amount of time as currently managed. The study proposes that Program Evaluation Review Technique (PERT) methods be applied to this flow management process to produce optimized inspection flow plans. Harvard Total Project Manager (HTPM) software is used to build an optimized flow which demonstrates the potential for flow day savings if attention is shifted from scheduling within a block of time to resequencing of events. The study concludes that current desktop project planning software can be integrated into the ISO flow management process.

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PREFACE

For years the art of aircraft production scheduling has remained largely unchanged, while the science associated with it has been altered dramatically. As the demands for airlift have increased, the incentive to increase productivity in maintenance management have risen as well. Within the constraints of our old methods and tools great improvements have been made, but we have now reached the part of the production curve which demands too great a price for further gains without change.

This paper is aimed at a possible method to make a leap into new and economical scheduling techniques for C-141 Isochronal Major Inspections. Techniques which might provide further economies in industrial activities, the end result of which will be additional useable aircraft on a daily basis. I call it Event-centered Scheduling Program (ESP), but it is simply a basic application of commercially available project management software. Centered in the Program Evaluation Review Technique, the program will run on any IBM or compatible computer, and provide real-time event management. It constantly recalculates the project critical path and is capable of work schedule building and resource deconfliction.

When applied to the Isochronal Inspection it is possible to create flow time savings without expending additional man-hours. The key is the program's ability to instantly compute event relationships. I believe that the model, although simplified to meet the constraints of this project, demonstrates that savings may be achieved through a change to Event-centered Scheduling and the use of modern production management software.

I would like to acknowledge the assistance of Headquarters MAC/LGXA and MAC/IGF, and especially 438th MAW/MAM and the 438th Organizational Maintenance Squadron.

ABOUT THE AUTHOR

MAJOR KENT A. MUELLER

Major Mueller is an Aircraft Maintenance Officer with thirteen years of experience. He earned his commission through the Reserve Officer Training Corps, graduating from the University of Missouri in 1975 with a Bachelor of Journalism degree. He holds a Master of Arts degree in Industrial Management from Central Michigan University which he completed in 1978.

He began his duties at Charleston Air Force Base, South Carolina, as a C-141 Flightline Supervisor, later serving as Branch Officer in Charge in both Organizational and Avionics Maintenance Squadrons. He rounded out his experience at Charleston as a Wing Job Control Duty Officer and was the senior maintenance officer in Zaire during the airlift of May of 1978. Next assigned to Hickam Air Force Base, Hawaii, Major Mueller was the Avionics Maintenance Supervisor supporting both the 6594th Test Group (AFSC), and the CINCPAC airborne command post aircraft of the 9th Airborne Command and Control Squadron (PACAF). He then began duties as the 834th Airlift Division Staff Maintenance Officer and Chief of the Logistics Readiness Center (LRC). Returning from overseas he became Chief of the Management Function, 21 Air Force, McGuire Air Force Base, and later Chief of the 21 Air Force LRC, a position from which he directed resupply of maintenance units during operation Urgent Fury, the liberation of Grenada.

Most recently Major Mueller was the Maintenance Supervisor of the 438th Organizational Maintenance Squadron, McGuire Air Force Base, New Jersey. He led over 580 people in the maintenance of 58 assigned C-141B aircraft.

Major Mueller was a 1982 Airlift Association Young Leadership Award winner, 1984 21 Air Force Junior Officer of the Year, a 1985 MAC nominee to the Ten Outstanding Young Americans competition, and was selected as the 1986 USAF Company Grade Aircraft Maintenance Manager of the Year.

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I. Purpose: To demonstrate an alternative approach to Isochronal Inspection work flow management using commercially available program management software.

II. Problem: Although improvements in workcenter management have occurred, efficiency and productivity in scheduled inspections have not kept pace with reductions in manpower and increasing demands for airlift resources. In addition, Program Evaluation Review Technique (PERT) methods were formerly not practical due to mainframe computer support requirements and complex data capture mechanics. Therefore, current inspection management techniques have not been designed to minimize flow times, but more to allocate manpower within established blocks of flow time. Automation at the C-141 units supports the current inspection method, but does not provide for flow planning optimization. To achieve increased efficiency in flow planning, event-centered thinking must be adopted and expressed through a PERT project management software program.

CONTINUED

III. <u>Model:</u> The models, ISO 1, ISO 2 and ISO 3 are constructed using the Harvard Software, Harvard Total Project Manager (HTPM) program. The events in the model are the C-141 Isochronal Inspection basic "look phase" items. The flow is expressed in inspection package job control numbers using activity times which are a blend of standard, three month average and random selection. Progressively event-centered, the PERT roadmaps for ISO 1, ISO 2 and ISO 3 demonstrate how savings might occur, as well as the utility of the program's simulation capability in the context of a suggested event-centered flow scheduling cycle.

IV. <u>Conclusions:</u> Event-centered scheduling achieved through such software application does demonstrate possible savings. To make the system work, however, workcenter manpower scheduling will have to be responsive to a flow plan that can be constantly reoptimized as activity times change.

V. <u>Recommendations:</u> Military Airlift Command aircraft maintenace managers, the Air Force Logistics Command C-141 System Program Manager, and Air Force Logistics Management Center aircraft maintenance managers should examine the feasibility of using desktop PERT application software to improve C-141 inspection flow management.

Chapter One

CURRENT GUIDANCE: IF IT'S WORKING, WHY FIX IT?

In the late 1960's the Military Airlift Command (MAC) maintenance engineering community took a look at the airlines and noticed the similarities in maintenance activities and daily requirements for airframes. Under the direction of Air Force Logistics Command, the Maintenance Steering Group-2 (MSG-2) zonal inspection system was developed by C-141 System Program Manager engineers and maintenance management experts. Within that system the Isochronal Inspection System took the basic shape we find it in today. On the surface it appears comprehensive, providing safe and serviceable airframes to meet the daily MAC mission. According to Headquarters Military Airlift Command Flying Safety (IGFF), the C-141 has compiled one of the safest records in aviation history with an average between 1984 and 1987 of only .245 major accidents per 100,000 flying hours.(13:--) The quality of scheduled maintenance being an undeniable part of this equation, why mess with success? The answer is efficiency. With demands for airlift up in 1986 and early 1987, and the fleet of active C-141s down due to transfers to the Air Reserve Forces, there is no room for slack in scheduling. Therefore, total airframe availability days become crucial determinants of the responsiveness of our airlift wings. Just what is an "airframe availability day"? In simplest terms on a yearly basis, it is the number of mission ready airplanes times the number of days per year they are available for missions. Because it is more susceptible to planning efforts, the most lucrative target to increase availability is the time spent in scheduled maintenance, specifically the major inspection. Event-centering, using Program Evaluation Review Technique (PERT) methods, can produce savings. (2:5) To demonstrate this I will begin with a tour of the Isochronal (ISO) Inspection, a discussion of current general policy and practices in scheduling, and the shortcomings of some of the current inspection management methods.

What is the Isochronal (ISO) Inspection, what is our current methodology, and just what do we have to gain? Let's begin with a look at the inspection program itself.

Officially, it is described as follows. "The planned inspection and maintenance concept provides a method of performing required inspections and repairs on a scheduled and planned basis." (8:4-1) One of four approved inspection concepts, the ISO is the most comprehensive inspection performed on the C-141 at the unit level. (7:2-1) It is part of an inspection system that includes the Preflight, Basic Postflight, Home Station Check and Minor and Major inspections. According to TO 00-20-5, "the major inspection is due upon the accrual of the number of calendar days established as the inspection interval in the applicable -6."(7:2-6) All these inspections use a zonal system. That is, the technician has specific items to inspect, but also is responsible for "areas" around those items.(9:I-02) See Figures 1,2 and 3.

Understanding the basic mechanics of the inspection deck, and the inspection interval helps one understand how PERT scheduling can be applied. I will confine this analysis to the Major ISO. The inspection is printed on 225 cards and is carried out within the guidelines of Technical Order 00-20 series publications and MAC Regulation 66-1. (6:31) A Major or Minor Inspection is due every 200 days.(This recent change based upon a proposal from the 438th Military Airlift Wing at McGuire AFB, New Jersey, raised the interval from 150 days.) The inspection card deck, the 1C-141B-6WC-5, includes both general guidance such as inspection interval, specific inspection requirements and descriptions of the zones to be inspected.(9:--) (See Figures 4 and 5) The deck was prepared and is maintained by the C-141 System Program Manager in cooperation with Military Airlift Command.(8:4-1) For the purposes of this analysis, the inspection items on the cards grouped by Air Force Specialty Code (AFSC) or specific Work Unit Codes(WUC) areas will be treated as PERT activities. Groups of cards are often scheduled on a single work order. For example in our inspection data (appendix A), Job Control Number (JCN) C101 calls for cards M-130 and M-132 through 135 to be accomplished. These groupings will be considered single activities in my discussion and model.

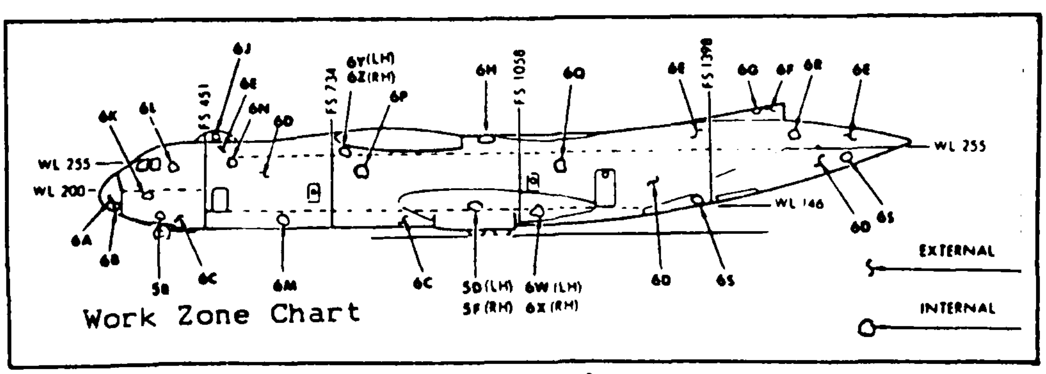


Figure 0

CARD NO	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO
1-02				:	1C-141B-6WC-5 10 JUN 83	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB-SYS AND COMP	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO
									1-02

1\. THIS WORK CARD DECK CONTAINS TWO TYPES OF INSPECTION REQUIREMENTS:

A. SPECIFIC INSPECTION REQUIREMENTS IDENTIFY SPECIFIC ITEMS TO BE INSPECTED AND LIST THE CONDITIONS TO BE SOUGHT.

B. ZONAL INSPECTION REQUIREMENTS ARE EQUALLY AS IMPORTANT AS SPECIFIC REQUIREMENTS. THESE REQUIREMENTS WHICH ARE PRECEDED BY THE WORD "OBSERVE" ARE GENERAL CONDITION INSPECTIONS OF ZONAL AREAS FOR OBVIOUS DEFECTS. WHEN COMPLYING WITH THESE INSPECTION REQUIREMENTS, MAINTENANCE PERSONNEL WILL REFER TO THE "ZONE OBSERVATION" CARD FOR SPECIFIC CONDITIONS TO BE SOUGHT.

2\. ACCOMPLISHMENT OF ZONAL INSPECTION REQUIREMENTS IS THE RESPONSIBILITY OF A MECHANIC/SPECIALIST DESIGNATED ON A WORK CARD WITH A TASK BEGINNING WITH THE WORD "OBSERVE." HOWEVER, EACH ADDITIONAL MECHANIC/SPECIALIST TASKED WITH SPECIFIC INSPECTION REQUIREMENTS WITHIN THE WORK ZONE WILL BE RESPONSIBLE TO "OBSERVE" BOTH THE ITEM BEING INSPECTED AND ALL ASSOCIATED EQUIPMENT/COMPONENTS FOR OBVIOUS DEFECTS. THE RESPONSIBLE MECHANIC/SPECIALIST IS NOT REQUIRED TO MAKE JUDGEMENTAL

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO
1-02				:	1C-141B-6WC-5 10 JUN 83	

Figure 1

MAJ MIN	WORK AREA	WORK UNIT CODE SYS	SUB-SYS AND COMP	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO. I-02

DECISIONS CONCERNING THE VALIDITY OF THE "OBSERVED" DISCREPANCY, BUT IS ONLY REQUIRED TO REPORT AND DOCUMENT THE DISCREPANCY TO ALLOW FINAL DETERMINATION AS TO ITS VALIDITY TO BE MADE BY THE SPECIFIC SPECIALIST.

3. WORK ZONE DESCRIPTIONS HAVE BEEN DEVELOPED FOR THE AIRCRAFT. THESE ZONES ARE ILLUSTRATED AND DEFINED ON THE "WORK ZONE CHARTS" AND "ZONAL DESCRIPTION" CARDS IN THIS DECK.

4. WHEN WORK CARD DECKS ARE SEPARATED BY SPECIFIC WORK AREAS, THE "ZONAL DESCRIPTION" FOR THE AREA AND THE "ZONE OBSERVATION" CARDS WILL ACCOMPANY EACH SEGMENT OF THE WORK DECK. REQUIRED CARDS WILL BE LOCALLY REPRODUCED.

5. THE MINOR/MAJOR INSPECTIONS WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE UTILIZATION CHART SHOWN ON WORK CARD (I-22). IN THE EVENT PROGRAMMED FLYING HOURS ARE CHANGED, ADJUSTMENTS WILL BE MADE TO THE INSPECTION INTERVAL AS REFLECTED ON WORK CARD (I-22). EACH USING COMMAND WILL BE RESPONSIBLE FOR MAKING NECESSARY ADJUSTMENTS.

Figure 2

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
I-03				:	1C-141B-6WC-5 10 JUN 83	2

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB-SYS AND COMP	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
									I-03

(CONTINUED FROM PREVIOUS CARD)

6. OVERFLYING/UNDERFLYING A SCHEDULED MINOR/MAJOR INSPECTION WILL HAVE NO BEARING ON SCHEDULED INSPECTION DUE TIME. IF A REQUIREMENT EXISTS TO OVERFLY A MINOR/MAJOR INSPECTION THE RED DASH WILL BE APPLIED IAW TO 00-20-5. ACCOMPLISHMENT OF MORE THAN ONE MINOR/MAJOR INSPECTION AT ANY TIME IS NOT AUTHORIZED. INCLUDED IN EACH MINOR/MAJOR INSPECTION ARE REQUIREMENTS FOR CHECKING CERTAIN COMPONENTS. AREAS AND SYSTEMS OF AIRCRAFT TO DETERMINE THAT NO CONDITION EXISTS WHICH IF NOT CORRECTED, COULD RESULT IN FAILURE OR MALFUNCTION OF THE COMPONENT PRIOR TO THE NEXT SCHEDULED MINOR/MAJOR INSPECTION.

7. THE MAN-MINUTES ON THE INSPCTION WORK CARDS IS TIME REQUIRED TO ACCOMPLISH EACH INDIVIDUAL INSPECTION ITEM. THIS DOES NOT INCLUDE PREPARATION OR REPAIR TIME. THIS TIME CAME FROM SERVICE TEST USING AN AVERAGE SKILLED MECHANIC/SPECIALIST TO ACCOMPLISH THE WORK PRESCRIBED BY THE CARD. THE TIME DEPICTED IS NOT INTENDED TO REFLECT THE MAXIMUM INSPECTION TIME, THE TIME TO PERFORM INSPECTIONS WILL VARY WITH EACH INDIVIDUAL INSPECTOR.

CARD NO	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
I-03				:	1C-141B-6WC-5 10 JUN 83	2

Figure 3

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1-09				:	1C-141B-6WC-5 10 JUN 83	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	SUB-SYS AND COMP		INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
				INTRODUCTION					1-09

ZONE DESCRIPTIONS

NO. 1 POWER PLANT AND NACELLE

1A NO. 1 PYLON - EXTERNAL
THIS ZONE COMPRISES THE EXTERIOR OF THE NO. 1 ENGINE PYLON, AND INCLUDES INLETS, OUTLETS, LEADING EDGE, AND ACCESS DOORS.

1B NO. 1 PYLON - INTERNAL
THIS ZONE COMPRISES THE INTERIOR OF THE NO. 1 ENGINE PYLON, AND INCLUDES ATTACHMENTS, STRUCTURE, DUCTS, PLUMBING, WIRING, AND FUNCTIONAL COMPONENTS MOUNTED WITHIN THE PYLON.

1C NO. 1 FORWARD NACELLE - INTERNAL
THIS ZONE COMPRISES THE INTERIOR OF THE FORWARD NACELLE, FORWARD OF THE AFT VERTICAL FIREWALL (PPS-185), AND INCLUDES THE ENGINE INTERIOR AND MOUNTS, SUPPORT STRUCTURE, CONTROLS, DUCTS, PLUMBING, WIRING, AND FUNCTIONAL COMPONENTS.

1D NO. 1 FORWARD NACELLE - EXTERNAL
THIS ZONE COMPRISES THE EXTERIOR OF THE FORWARD NACELLE, FROM THE ENGINE INLET COWLING TO THE EXHAUST NOZZLE ASSEMBLY (PPS-185), AND INCLUDES ALL INLETS, OUTLETS, DOORS, COWLS, AND DRAINS.

CARD NO	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1-09				:	1C-141B-6WC-5 10 JUN 83	

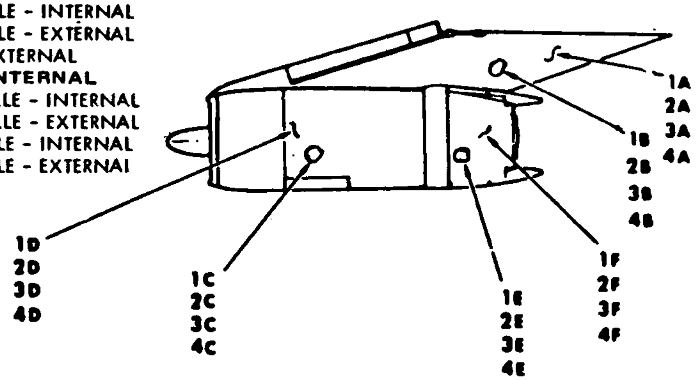
Figure 4

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
I-05				:	1C-141B-6WC-5 10 JUN 83	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	SUB-SYS AND COMP		INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
				INTRODUCTION					I-05

WORK ZONE CHART
POWER PLANT

1A NO. 1 PYLON - EXTERNAL
1B NO. 1 PYLON - INTERNAL
1C NO. 1 FWD NACELLE - INTERNAL
1D NO. 1 FWD NACELLE - EXTERNAL
1E NO. 1 AFT NACELLE - INTERNAL
1F NO. 1 AFT NACELLE - EXTERNAL
2A NO. 2 PYLON - EXTERNAL
2B NO. 2 PYLON - INTERNAL
2C NO. 2 FWD NACELLE - INTERNAL
2D NO. 2 FWD NACELLE - EXTERNAL
2E NO. 2 AFT NACELLE - INTERNAL
2F NO. 2 AFT NACELLE - EXTERNAl



3A NO. 3 PYLON - EXTERNAL
3B NO. 3 PYLON - INTERNAL
3C NO. 3 FWD NACELLE - INTERNAL
3D NO. 3 FWD NACELLE - EXTERNAL
3E NO. 3 AFT NACELLE - INTERNAL
3F NO. 3 AFT NACELLE - EXTERNAL
4A NO. 4 PYLON - EXTERNAL
4B NO. 4 PYLON - INTERNAL
4C NO. 4 FWD NACELLE - INTERNAL
4D NO. 4 FWD NACELLE - EXTERNAL
4E NO. 4 AFT NACELLE - INTERNAL
4F NO. 4 NACELLE - EXTERNAL

EXTERNAL

INTERNAL

CARD NO	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
I-05				:	1C-141B-6WC-5 10 JUN 83	

Figure 5

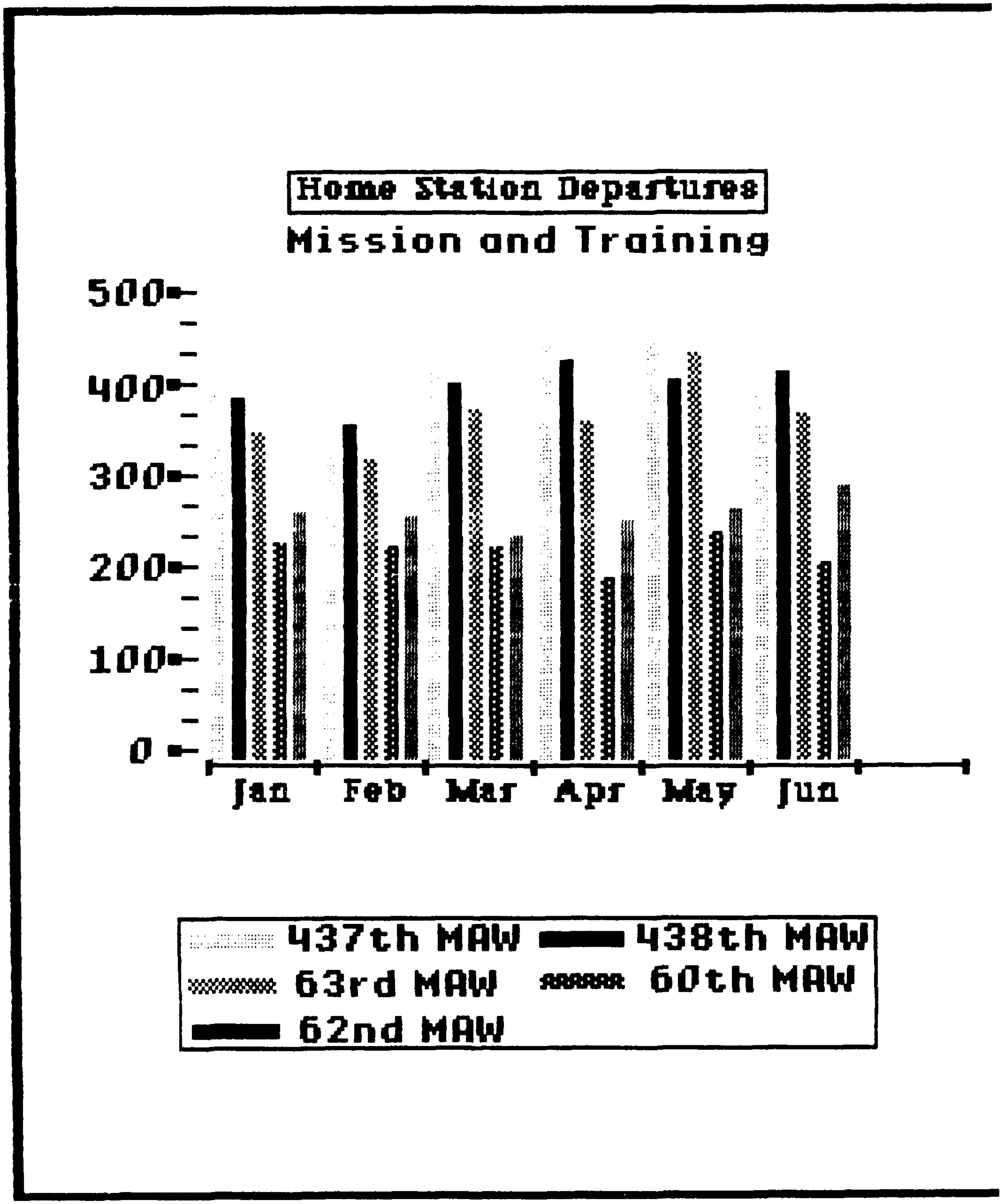
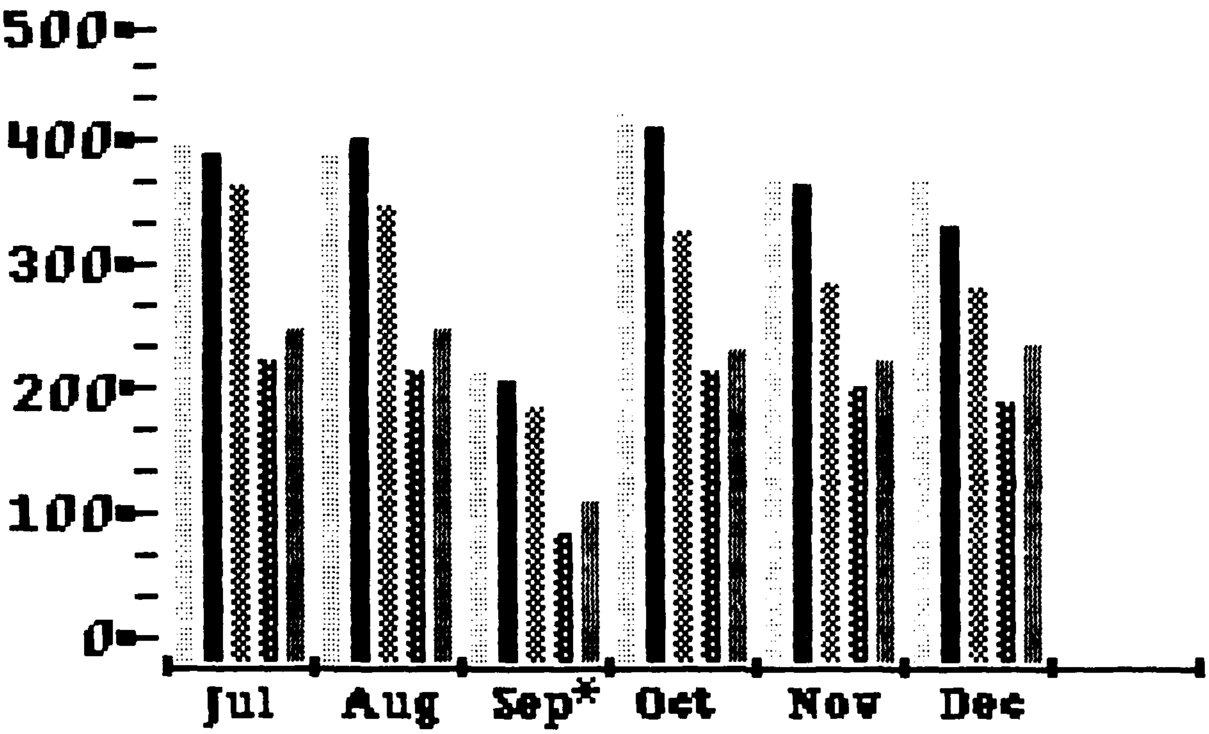

Home Station Departures
Mission and Training
500
400
300
200
100
0
Jan
Feb
Mar
Apr
May
Jun
437th MAW
438th MAW
63rd MAW
60th MAW
62nd MAW

Figure 6



*September Training launch figures not available.

The best way to appreciate shortening scheduled maintenance inspection flow times is to consider the cost of "down time" for scheduled events. All industrial activities have costs, and in MAC the best expression of cost in terms of the mission is the previously defined concept of airframe availability days. The reason is the fact that the success of the daily world-wide MAC mission depends on mission-ready aircraft. From a more parochial view, the fewer days scheduled events take, the more aircraft are mission ready on a daily basis, thus creating greater scheduling latitude for maintenance control schedulers. More important, scheduled activities lend themselves to management techniques, whereas the unscheduled malfunctions (random events) must be handled as they arise. Better management of scheduled maintenance will therefore lessen the impact created by random failures as more aircraft (scheduling alternatives) become available. From the scheduling perspective, faster scheduled events reduce the impact of random events, resulting in the possibility of greater scheduling flexibility. This is the case simply because efficient use of manpower during scheduled events makes more man-hours available each day to handle random failures.

Recognizing this need for economy and its benefit in scheduling and airframes, let's further zero in on the choke point in the industrial process. ISO inspections are performed using stands and facilities of limited quantities. Usually an airlift wing has only one enclosed facility for the inspection. McGuire, for example, has been limited to one ISO facility due to construction for several years. Therefore, another powerful argument for trimming flow times is facility maximization. In the civilian industrial world the fixed and variable costs of operating a facility always inspire economy. For units like McGuire, the inspiration is an annual schedule with few slack days. To assess the current costs in flow days I will use data from the 438th MAW at McGuire AFB, New Jersey. This unit was selected because it has one of the most demanding flying schedules among the C-141 units in MAC.(See figure 6) Based upon the December 1987 Maintenance Digest for McGuire, the ISO flow cost in days averaged eight. (14:--) This includes a wash day, two "look phase" or dock days, and the rest of the time consumed in repair or "fix phase." A comparison of flow days between the wings is impossible due to the fact that there is not a standard way for computing this figure.(16:--) The dock days are the "in facility" days. It is during this period that the actual inspection occurs. It is this time, specifically the look phase activities, that are the focus of this application of PERT methods and thinking as the Event-centered Scheduling Program (ESP).

After the roll out at the end of day two (upon completion of the activities which require the industrial stands and the facility) the fix phase continues. This time is referred to as "back line." Based upon my own experience and of those currently working the problem, the back line flow days are often complicated by poorly orchestrated scheduling as well.(15:--) During my tenure at McGuire, 438th MAW personnel were able to trim 33 percent from the total back line time just through aggressive scheduling. This was accomplished through relentless use of the Maintenance Preplan, Air Force Form 2406, and quite honestly, many hours of extra attention by management. Jobs were scheduled and followed by Inspection Branch managers 24 hours a day. Personal intervention by top management was frequently needed to keep the effort on the "back line" jobs. I observed no institutional bias for economy, and the improvements would regress without daily emphasis. We will get at the solution when we explore the models.

In my opinion current policies and practices in scheduling inspection items and manpower are static, and not responsive to changes which occur once the inspection is underway. For example, once the inspection package is begun,the plan is no longer actively refined. It is useful only as a guide, not as a dynamic management tool. Based upon my experience, the MAC Regulation 66-1, Maintenance Management, Volume II, guidance for Maintenance Plans and Scheduling produces basic chronologies of events which usually are modified to meet workcenter availability at the expense of the optimum flow. Chapter 2, paragraph 2-34, describes the planning process.(6:31) First, Plans and Scheduling prepares the AFTO 349 Maintenance Data Collection (MDC) forms based upon known requirements. At the 438th, 437th, 443rd, 63rd, 62nd and 60th Military Airlift Wings (MAW) this has been replaced by the generation of automated products which perform the same function. Then the work package is built. Delayed discrepancies and Time Compliance Technical Orders (TCTO) are then factored into the flow. A pre-inspection meeting is held at which the flow is presented to the workcenters. The workcenters approve the flow based upon their forecast capability. Then the flow is plotted on an Air Force Form 2406 and final 349s or computer products are generated. Unscheduled items are presented to the dock coordinator, and the 2406 adjusted. The result is less than optimal coordination of ongoing activities, but more importantly, it is scheduling jobs to fill a block of "dock time" rather than creating an optimized flow of jobs to minimize facility time. This problem is complicated by the dynamics of Maintenance Job Control. According to MAC Regulation 66-1, Volume II, Job Control "controls all maintenance on assigned aircraft and equipment."(6:13)

Unfortunately, scheduled activities are traditionally not given equal footing with the demands of the flying schedule.(6:12) I have observed this, and confirmed it in conversation with the 438th MAW Deputy Commander for Maintenance Production. (14:--) The result can be further disruption of the Plans and Scheduling flow plan for inspection workorders.

The manual, reactive nature of this scheduling process is one of the factors which makes scheduling less than optimally efficient. Generally the weekly scheduling meeting endorses or condemns the plan based upon established workcenter manpower shift arrangements. Plans and Scheduling "reacts" by modifying the flow, but once the inspection is underway, there is no procedure to revisit and optimize the order of activities. This manpower centered response does not come to grips with the demands of production. What emerges from this process is an allocation of specialists which meets the requirements for blocked facility time, but doesn't seek to shorten it.

Control of specialist dispatch is also a problem. The Inspection Branch of the Organizational Maintenance Squadron is responsible for the management of the ISO flow.(5:19) Job Control used to dispatch, but that control has been transferred to the Inspection Branch with the advent of the Airlift Interim Consolidated Aircraft Maintenance Supply and Reliability Maintainability Information System (AICARS) computer system. The electronic dispatches now issue from the Inspection Branch "Dock Coordinator" directly to the shops. The specialists who perform the workcards, other than the Airplane General (APG) are not assigned to the Inspection Branch, rather to the specialist squadrons, Avionics Maintenance and Field Maintenance Squadrons.(5:--) This supervisory disconnect reduces management's control over activity start and completion times. The ISO production manager's static plan, limited control of specialist dispatch, and "two day block of time" dock philosophy insure that facility flow times are rarely reduced.

In terms of order of events and dynamic scheduling to produce the shortest flow times, current specialist dispatch methods are, in my opinion, an area where improvement is possible. Currently it is manpower availability centered with insufficient regard for when activities need to take place. My experience in managing an organization which produced well over 100 major and minor inspections a year taught me that the bottom line is that the workcenters will "pay for the activities" called for in the inspection sooner or later. The question I hope to answer at the end of this paper is, why not cover the activity in its optimized order? To do this I'll argue that some current conventions must be discarded, and the notion of adjusting shift availabilities to take advantage of PERT methods must be adopted.

The pitfalls of the current methods provide fertile ground for PERT innovation. Dispatch of specialists for the ISO flow work requirements is often done on a "make it fit" basis. Job Control defaults in favor of the generation effort. As previously stated, with the new automated system, the dock coordinator can control the dispatch of specialist to the dock. But Job Control often is dispatching from the same pool of manpower, and the launch "red streak" workorders come first. In MAC, the aircraft on the schedule within two hours of launch, and those in the first eight hours of recovery are priority 02. The ISO aircraft is priority 03. There is nothing bad in that, in and of itself, except that it is habit-forming, and we have institutionalized the lower prioritization of inspection activities. I have observed no real incentive for the specialist workcenters to modify the way in which they schedule manpower against inspections. Hence, swing and grave shift support may suffer when management attention decreases at the end of the day shift. Why not redefine priorities in terms of efficiency? With PERT methods the same number of man-hours will produce a shorter flow. I'll show you how this works in the explanation of the model "look phase" flow.

Essentially what has evolved is a flow plan which meets minimum "block" time constraints with little regard for the minimizing of facility time or total flow days. In addition, commitment of manpower resources and priority of dispatch have produced a system in which the job seems to expand to fit the facility time--or exceed it. There is an opportunity with PERT methodology to right some of these problems.

Chapter Two

OVERLOOKING THE OBVIOUS: THE PERT METHOD'S ADAPTABILITY TO ISOCHRONAL INSPECTION SCHEDULING

Program Evaluation Review Technique(PERT) was developed in the early 1960's to support a defense contractor's effort to manage the Polaris submarine development program.(2:4) It is a basic graphic way of chronologically ordering a project to allow the simultaneous completion of compatible activities.(1:425) Activities are defined as basic work groupings.(1:424) In our application the activities will be specific inspection work cards or groupings of carded work items by AFSC/WUC. The result of this ordering is the shortening of the project, by minimizing slack time. Before adapting the methodology to the ISO inspection program, let's take a look at the terminology and concepts of PERT as described in <u>PERT-Time System Description Manual</u>.(3:II-1)

EVENT-symbolized by a box an event consumes no time itself, but signals the start/finish of an activity. Events are best thought of as milestones.

ACTIVITY-the task, in this case a ISO card item or items is symbolized by an arrow. The arrow length in the PERT chart does not necessarily relate to length of the activity, but is used to connect events.

CRITICAL ACTIVITY-This is an activity which occurs along the critical path.

CRITICAL PATH-Simply put, this is the shortest way through the production process being analyzed. Critical path activities have no slack time.

TE-In the PERT chart this symbolizes the earliest expected event time.

TL-The latest allowable event time is represented by TL. If the required event does not occur by TL, a delay will be incurred.

SLACK TIME-Expressed mathematically this is TL-TE. Each path in the chart is evaluated for slack time, activity by activity. Activities with zero slack time lie on the critical path.

ROADMAP-Also called a network, this is the graphic model which results from PERT scheduling. It is a lattice of event boxes and milestones connected by activity arrows.

Lawrence Lapin's text on Quantitative Methods best describes the utility of PERT. "A major advantage of PERT is that the network provides a basis for establishing a compatible activity schedule that permits project completion in a minimum amount of time."(1:430) This essential quality of PERT makes it very adaptable to the ISO inspection process. As for specific drawbacks, the PERT method used to become unmanagable rapidly because it was done manually, and required main frame data automation support. It is likely that for this reason its application has not become more wide spread until recently. The solution appeared with the proliferation of desk top computing capability, and the emergence of simple application software for PERT. More than one of these programs exists, but I have used Harvard Total Project Manager (HTPM) as my tool for this project.(12:--)

Let' examine a generic PERT roadmap so that you will be comfortable with the process when I get to my ISO application. I'll use terminology and symbols which come from the program with which I have built my event-centered schedules.(Figures 9,10 and 11) First, as in Figure 7, the START and FINISH are clearly labeled. The numbered boxes are the EVENTS. Remember these do not "take time", but represent the beginning and end of adjacent ACTIVITIES. The lines (or sometimes arrows) between EVENTS are the ACTIVITIES. These represent the time it takes to do the tasks within the ACTIVITY. Next, to construct the ROADMAP with the program, a scheduler simply loads the EVENTS and their expected ACTIVITY times. Then he or she indicates to the program if an EVENT must precede or follow the particular tasks being loaded. Finally, once accepted, the new items are automatically computed into the ROADMAP(OR NETWORK). The CRITICAL PATH appears as a double line. If adding an activity to the ROADMAP changes the CRITICAL PATH, it will be displayed automatically. Gone forever are the tedious calculations and requirements for mainframe computer support. Because the model constantly reevaluates the CRITICAL PATH, changes in ACTIVITY time can instantly be evaluated by the scheduler and production manager to revise the schedule or redirect resources to meet the goal. This power to simulate results of changes is an especially powerful tool in the decision making that goes into how to expend manpower resources.(3:I-5) This feature is very well suited to the ISO inspection, in that each inspection involves adjustments based upon subtle differences from aircraft to aircraft. Harvard Total Project Manager is also

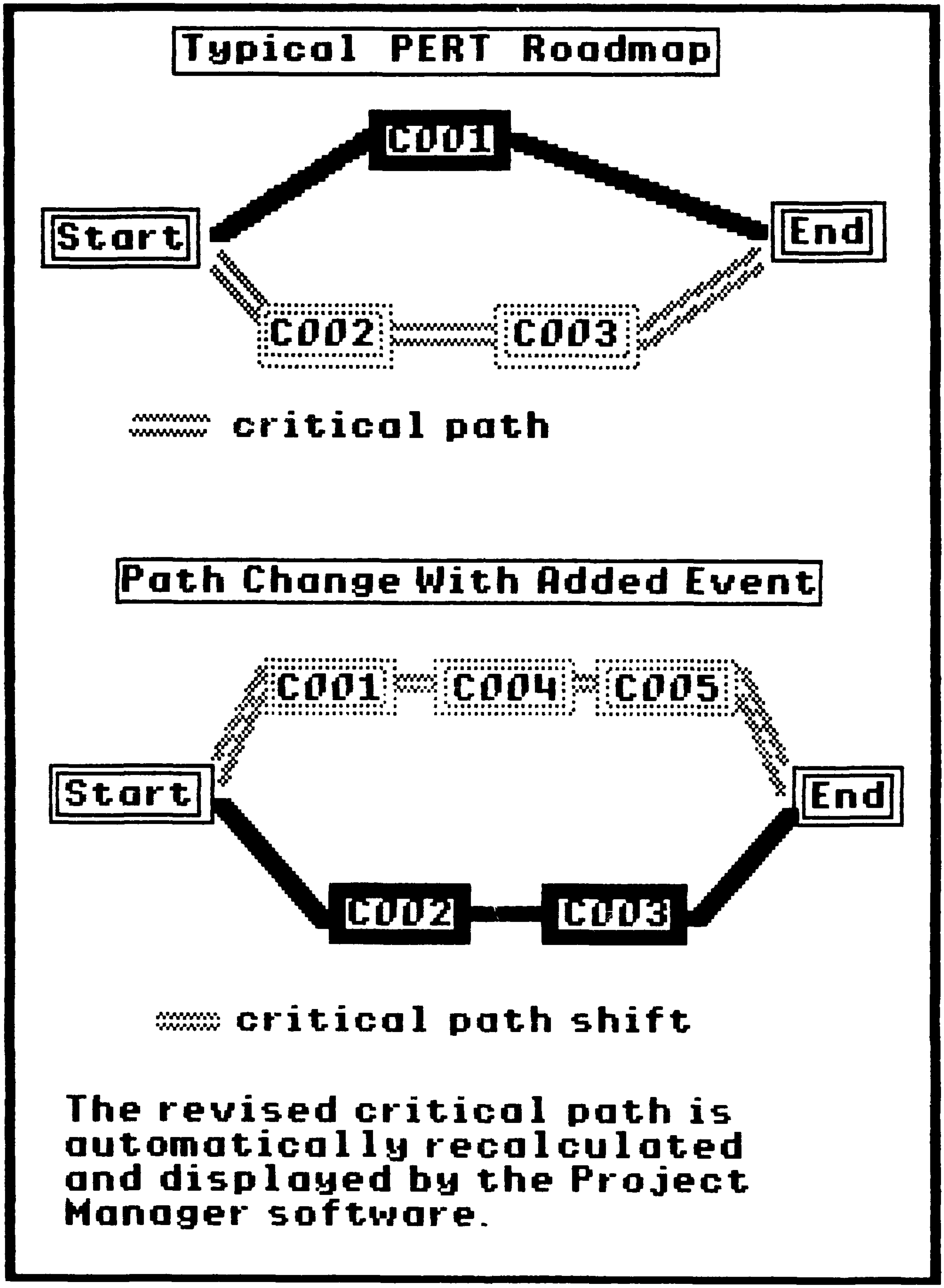

Typical PERT Roadmap
C001
Start
End
C002
C003
critical path
Path Change With Added Event
C001
C004
C005
Start
End
C002
C003
critical path shift
The revised critical path is automatically recalculated and displayed by the Project Manager software.

Figure 7

capable of relating calendars and resource limitations to industrial activities, but I have utilized only the scheduling portion of the program.

If it's such a great system, why hasn't it been put to wider use? The answer is that up until recently the calculations for each event, as well as for the critical path had to be done by hand. At best they were done by large main frame computers, at great expense. PERT-Time System Description Manual spends seven chapters explaining the mathematics and data automation needed to make the system work. This cumbersome process is no longer needed to carry out PERT scheduling.(12:--) Now the constraints of the past are gone as PERT ROADMAPS and resource allocation for industrial activities exceeding two thousand activities may be done in any wing Plans and Scheduling equipped with a IBM compatible computer and dot-matrix printer capable of printing 180 column width.(12:iii) PERT methodology indeed provides a unique tool for industrial managers to exert control over the architecture of their activities, to both more effectively use their resources and shorten production times. In 1963 as the method was just gaining acceptance in its most rudimentary form, its strengths for production were already well defined. Volume 1, PERT-Time System Description Manual, published by Air Force Systems Command identified ten advantages of PERT which are as true today as they were twenty-five years ago.

PERT:

1. provides disciplines which insure complete program coverage, avoids omission of important tasks at the outset of a program, and provides visibility from the total program objective down to the lowest supporting task.(3:I4)

2. fixes responsibility and assures continuity of effort despite turnover in either executive or operating personnel.(3:I4)

3. assists in identifying real time requirements and provides limits for detailed scheduling.(3:I4)

4. spots potential problem areas in time for preventive action or for improvement.(3:I4)

5. uses the management-by-exception principle in reporting to higher levels of management.(3:I4)

6. measures accomplishment against current schedules plans and objectives.(3:I4)

7. provides an opportunity for consideration of trade offs in funds, manpower, performance, and time between critical and noncritical areas of effort as a means of improving schedule plans for one or more programs.(3:I5)

8. permits rescheduling and provides periodic evaluation of plans.(3:I5)

9. makes it possible through its simulation techniques to evaluate and forecast outcomes of alternate plans before implementation.(3:15)

10. provides a historical data bank for the program which can be drawn upon for new programs.(3:15)

Now that I've discussed why we need to make improvements, the strengths of the PERT method, and some of the details of the program I've chosen and its advantages, let's go on to the scheduling exercise I've done to illustrate my point. I call it Event-centered Scheduling Program (ESP), and it's a combination of PERT, and a shift away from the some of the scheduling thinking I have already addressed.

Chapter Three

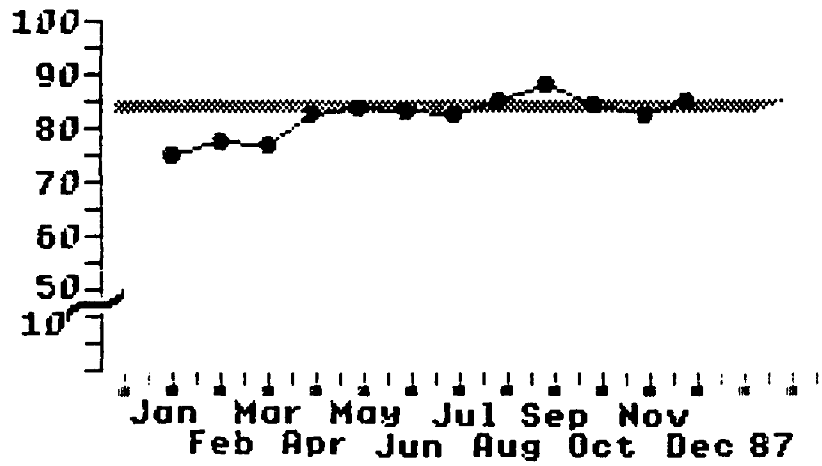
THE EVENT-CENTERED SCHEDULING PROGRAM(ESP): MAXIMIZING FACILITY USE, MINIMIZING INSPECTION FLOW DAYS

The success of brief periods of schedule compression during my tenure at McGuire left me convinced that significant slack time existed in the ISO program. Although people seemed fully employed, it was apparent that their activities could be fit together in a more efficient fashion. The test came in 1987 when we at the 438th Military Airlift Wing were tasked under the MAC/AFRES memorandum of agreement on the C-141B transfer to handle additional ISO inspections. Local managers told us that we could "just not go below two dock days." Plans and Scheduling calculated that a day-and-a-half flow (36 hours of "in facility time") would provide enough room for the additional inspections. So, over objections, we established the day-and-a-half flow, and it worked. Most aircraft had 28 to 36 hours of "in facility" time. One rolled out in 24, and they were all different. An important feature of this flow is that short facility time did not significantly increase the "back line" days. The result was fewer total days of scheduled inspection down time. This contributed to the rising mission capable rate for the 438th MAW during the spring of 1987.(14:--)(15:--)(See figure 8)

What kind of guidance is available for production? Technical Order 00-20-5, paragraph 2-1, a.,3 merely outlines the inspection system; paragraph 2-10 defines the concept.(7:2-6) MAC Regulation 66-1, Volume III, Chapter 2, section C, clearly defines the Inspection Branch Chief's duties. It discusses tools, charts, cards and the Maintenance Preplan form 2406.(5:19) MAC Regulation 66-1, Volume II, Chapter 2 is explicit in explaining the use of the form 2405, Personnel Availability Forecast, and an explanation of shop backlog. (6:31) In addition, MAC Pamphlet 66-66, Workcenter Management Handbook, devotes a good deal of space to the mechanics of repair cycle work scheduling.(4:4-32) As described in Chapter One, the resulting scheduling process produces only roughly deconflicted chronologies. What is missing across the board is reference to personnel scheduling to optimize schedules of industrial activities. As strange as this lack

Percent Mission Capable

438th Military Airlift Wing



source: Maintenance Digest
438th MAW, Dec 87.

MAC standard is 85%

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
75.7	77.2	76.2	82.5	84.6	84.2	83.7	85.2

Sep	Oct	Nov	Dec
88.3	85.0	83.2	86.0

Figure 8

of guidance may seem, I have witnessed it for thirteen years. I am suggesting the analysis of ISO flows, scheduling based upon the shortest path, and constant simulation within the PERT computer program to update and optimize the use of personnel resources. Now, let's look at a simple scheduling exercise using the Harvard Total Project Manager(HTPM), data provided by HQ MAC(11:--) and 438th MAW(10:--) and some event-centered thinking.

First, discard the conventional notion that workcenter manpower availability is less adjustable than industrial event schedules. Assume that based upon recomputed requirements workcenter manpower can be tailored for maximum efficiency in event order. Thus "event-centered" we can get on with the model. The basic data for the model is a standard AICARS report and may be found in Appendix A. Numbered 7143-M378SR and titled AFTO 349 Special Discrepancy Verbiage Listing, it is sequentially numbered by Job Control Number(JCN) beginning with C001 and ending with C278.(10:20) Also used was Appendix B, VIRP-M379S11, Man-Hours for McGuire ISO's (Major) October-December 1987, and Appendix C, which is a summary of hours expended against a randomly selected inspection of aircraft 157. As previously mentioned, jobs frequently encompass more than one card. I limited the model to the cards which reflect preparation, opening and "look phase" items. I selectively included service and repair activities that I know require the industrial stands in the dock. In short, the object of this exercise is to shorten the "in the stands" or facility time. Here are some explanations of key elements of the model.

A. <u>EXPECTED TIME</u> for the purposes of the model is a synthesis of the the 7143 report job standard, the by job number recap of the randomly selected inspection of aircraft 157, and a HQ MAC/LGXA three month average, by job number, of 13 major inspections at McGuire. This cross-checking was necessary due to the fact that Maintenance Data Collection (MDC) figures for "look phase" cards are frequently inflated inadvertently through the inclusion of "fix" activity time.

B. <u>CREW SIZE</u> was the job standard designated number. This was the most reasonable estimate because MDC units for the inspection reflect zero except for the single entry in which the inspection is cleared. In addition the crew size is in fact a resource variable which may be manipulated in a more sophisticated model. Crew size was used to divide total times for activities to create a straight line expected time estimate.

C. <u>EARLIEST TIME</u> was calculated by the HTPM program.

D. <u>LATEST TIME</u> was calculated by the HTPM program.

E. <u>SLACK TIME</u> was calculated by the HTPM program and used to continuously calculate the critical path.

F. <u>CRITICAL PATH</u> calculated and graphically presented in the roadmap display of the HTPM program.

The data was input by Job Control Number(JCN) up to the "close cards" (panel up). This essentially produced a ready to roll aircraft. The first run, titled ISO 1, was input with regard for sequencing, but with no attempt to optimize. For example engine cowlings were opened (JCN C063-66) before the engine inspections were scheduled (JCN C079-80 and C083-84). The second run, ISO 2, was very simply event-centered, by moving the start of JCN C079/109, the aft fuselage and fuel cell cards, to immediately follow the inspection start. This could be accomplished due to the fact that no other event must precede these cards. Furthermore, the areas and specific actions do not conflict with other activities. Run number three, ISO 3, reflects further simple event-centered refinement. The Aero Repair cards, organized under the JCN C106, were moved out of a chain of events upon which they did not depend. They were placed after JCN C001/38 which are prep and open card items. Since experience has indicated that total flow days need not go up if facility time is limited, the differences in flow times (delta) may represent savings in down time for scheduled major inspections.

Manpower requirements would vary from inspection to inspection, but would become more predictable as the data base developed. The ESP scheduling product would be available to all workcenters. As events occurred or activity times changed, the scheduler could use the simulation capability of the program to give optimized and finely tuned requirements to the shops literally on a minute-by-minute basis. In Chapter Four I will describe the ESP scheduling process.

Keeping in mind that two days (48 hours) was an accepted "in facility" flow time, the ISO 1 schedule produced a rollout in less than 40 hours, 35.8 hours to be exact.(Figure 9) The order of events was revisited in ISO 2 and, activity start times moved to get more shops employed performing more cards concurrently. The aircraft was complete in 27.5 hours, a savings of 8.3 hours.(Figure 10) In ISO 3 (Figure 11), as previously explained, activities were further deconflicted, resulting in more simultaneous events and a facility flow time of 23.7 hours, 12.1 hours better than ISO 1.(Figure 9) The standard 48 hour/ISO 3 difference of 24.3 hours represents a significant possible savings in flow time. This delta, extrapolated in a straight line fashion over 60 major inspections per year equates to just over two months of additional airframe availability for one of the unit's assigned aircraft. It is literally like increasing the number of unit assigned aircraft. Admittedly such straight line predictions are dangerous, but the point of this paper is not to produce an airtight model, but to point out a new way of approaching the scheduling task. What has been demonstrated is that if we change our perspective, pick up some off-the-shelf software, and reorient our scheduling effort, we may be able to improve efficiency and realize some flow day savings, savings which equate to available aircraft.

Chapter Four

PRODUCTION MANAGEMENT IMPROVEMENTS; WHO NEEDS 'EM?

Now that the possibility for flow day savings has been demonstrated, just how would the program be managed in the scheduling process? Further, are there other production management improvements which have obvious application in the ESP approach to scheduling?

ESP would fit the current planning cycle outlined in MAC Regulation 66-1, Volume 2, Chapter 2.(6:31) For C-141B units the AICARS inspection package could serve as the source for the ESP flow plan. Just as in the product I used for my model, inspection card items, or groups of items, would be organized by specific JCN. Prior to the scheduling meeting, Plans and Scheduling would optimize the flow to meet the Deputy Commander for Maintenance Production flow requirement, let's say 24 hours in the facility. Then delayed discrepancies and Time Compliance Technical Orders (TCTOs) would be factored, and the ESP program would automatically recalculate the optimum flow.

The workcenters and Job Control would then join Plans and Scheduling at the Pre-Inspection Meeting. Usually held once a week, several inspections would be refined at this meeting. The optimized ESP flow would be critiqued using event-centered priority. The workcenters would plan for shift tailoring if needed. After the meeting a resulting "start" ESP flow would be used to generate an AICARS product reflecting estimated specialist dispatch times. The ESP program would replace the Air Force Form 2406 as the Inspection Branch Chief's primary flow planning tool.

Once the inspection was underway, control of specialist dispatch, and the active ESP flow plan management would shift to the Dock Coordinator of the Organizational Maintenance Squadron Inspection Branch. In the Dock Coordinator's "cage" the active ESP flow program would be booted up, and AICARS specialist dispatches accomplished as planned. Unscheduled problems, or anything which might affect the ESP projected flow would be loaded into the program by the Dock Coordinator, and the new flow automatically calculated by the ESP program. The Dock

Coordinator would inform the workcenters through AICARS, adjust dispatch times accordingly, and update Job Control. Completed ESP flow plans would be recorded on a hard disk drive, and the resulting data base managed by the Documentation Section of Maintenance Control.

As for related innovations, based upon the fact that the standard computers in C-141 maintenance squadrons are IBM compatible, it is likely that the ESP program would be networked to the various workcenters using modems. This would allow for simultaneous update of each manager's flow plan. The reports generating capability of the program would be used by management to assess the success of the scheduling and production effort. Further, the resource management elements of the program which I have not exploited in my proposal would be fully developed by the unit level managers.

In addition, repair cycle innovations should be applied to ESP scheduling. Specifically, prepositioning of frequently replaced hardware and assemblies could prevent flow delays. On the C-141 items like the main landing gear yokes, trunions and adapters, the latrine, galley, the life raft silos, life raft straps and radome are good examples of items that could be removed on the wash day, and replacements installed during the first eight hours of the inspection. Such planned repair cycle replacements would have to be balanced against their additional cost, but are exploitable in an effort to provide more mission capable aircraft through event-centered flow plans. Frequently replaced expendable panels could be kept on supply point in the Dock, with a library of trim/drill templates to expedite installation. The templates would be accumulated by tail number during the first cycle of the new program. Although it would have to be carefully evaluated against required spares levels, propulsion managers could plan for an average of one engine replacement per inspection due to cracks, corrosion or other factors. These types of initiatives would enhance the application of ESP scheduling.

The encouraging conclusion reached is that event-centered scheduling does present the promise of savings in an industrial activity such as a C-141B Major Isochronal Inspection. Flow day savings are not predictable, but those likely economies are not the only benefits which can be reasonably expected from such an application of PERT methodology. Man-hour expenses should not increase. For example card C061, removal of an engine pylon drip pan, will cost you the same two hours no matter when you expend them in the flow plan.(9:61) Based upon deconfliction and Propulsion Branch availability, why not do it as early on day one of the inspection as possible? This is the premise which, if applied through existing production management software, can result in savings. In fact, using the deconfliction capability the program simulator gives the scheduler, I believe, savings in absolute man-hours expended during the inspection can be achieved.

As stated in the Materials Management Institute book PERT/CPM, "PERT is not the end all, but has advantages not offered by other systems."(2:5) It was designed for large projects but is well suited for small groups of activities as well.(12:1-1) Event-centering forces organization and demands logical control. Not only a major organizing tool, it can be a superior communication instrument for all layers of management.(2:5) In the case of HTPM and other project management software, it is also an excellent report generator, and a tremendous industrial management simulator. PERT, if exploited through a method such as event-centered scheduling (ESP), will furnish the ISO Dock Coordinator "...not a tool that will do his job for him, but one which will extend his ability to act effectively with the best information available."(2:3)

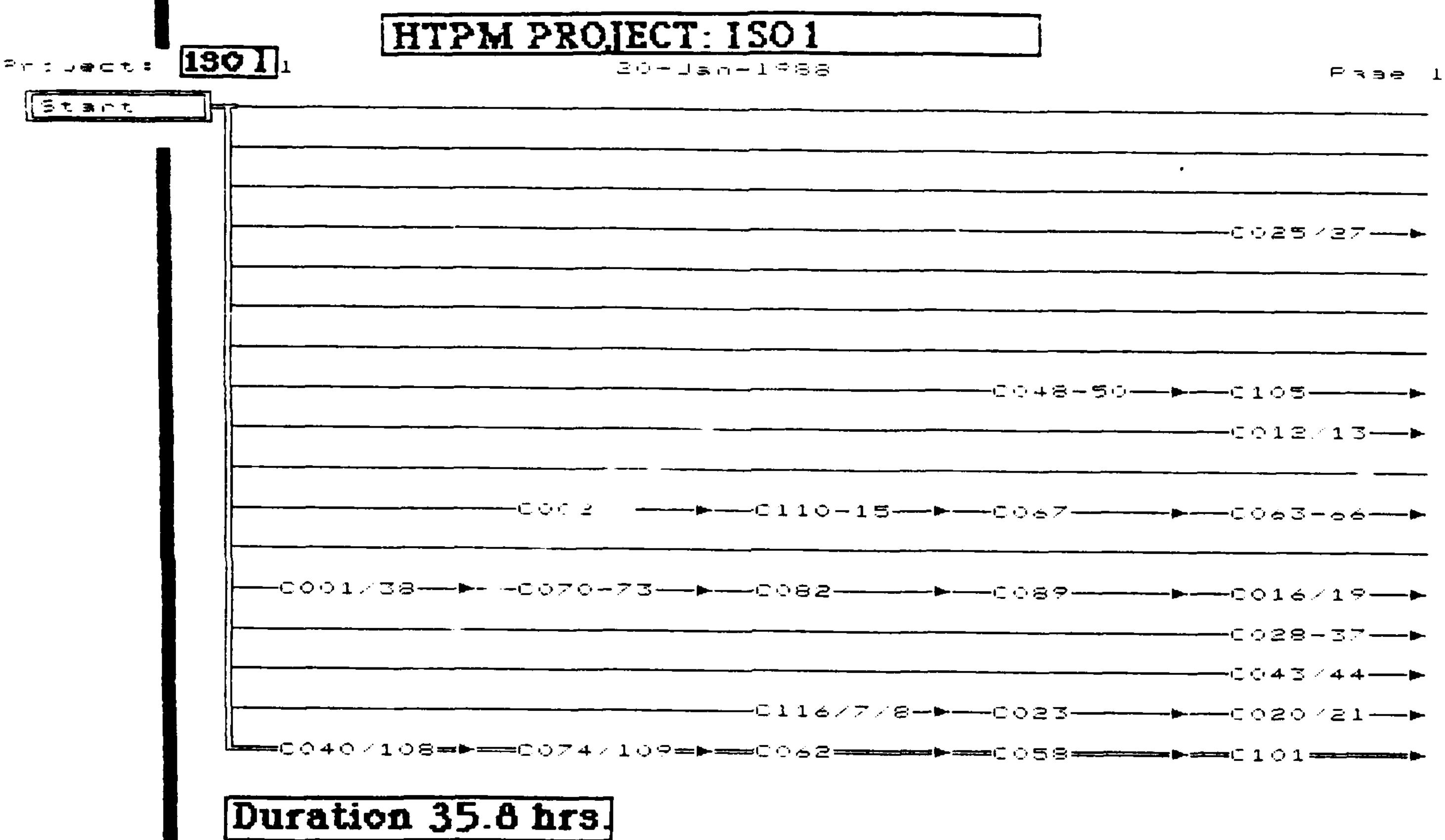
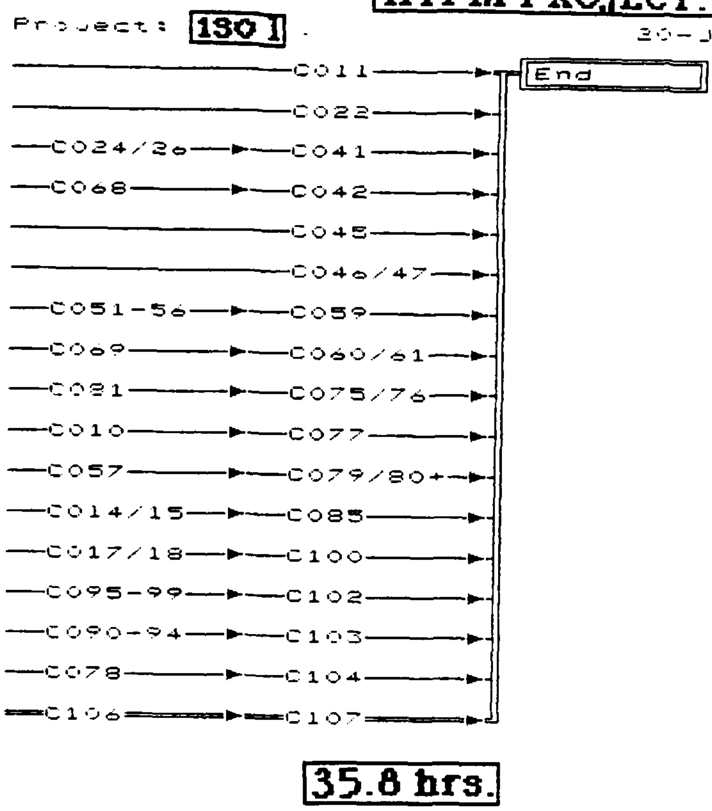

HTPM PROJECT: ISO1
Project: ISO1
Page 1
Start
C025/27
C048-50
C105
C012/13
C110-15
C067
C063-66
C001/38
C070-73
C082
C089
C016/19
C028-37
C043/44
C116/7/8
C023
C020/21
C040/108
C074/109
C062
C058
C101
Duration 35.8 hrs.

Figure 9

HTPM PROJECT: ISO1



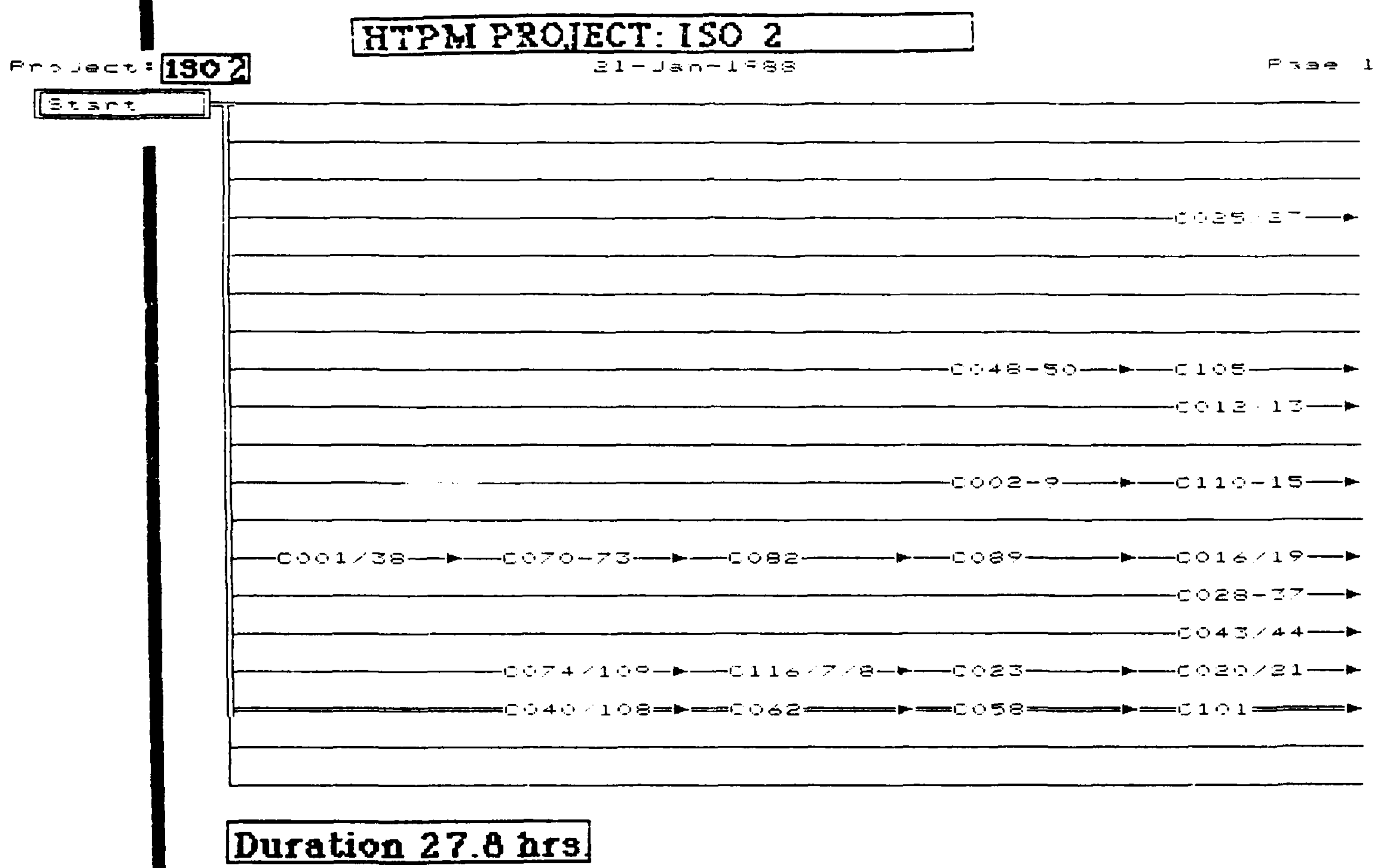
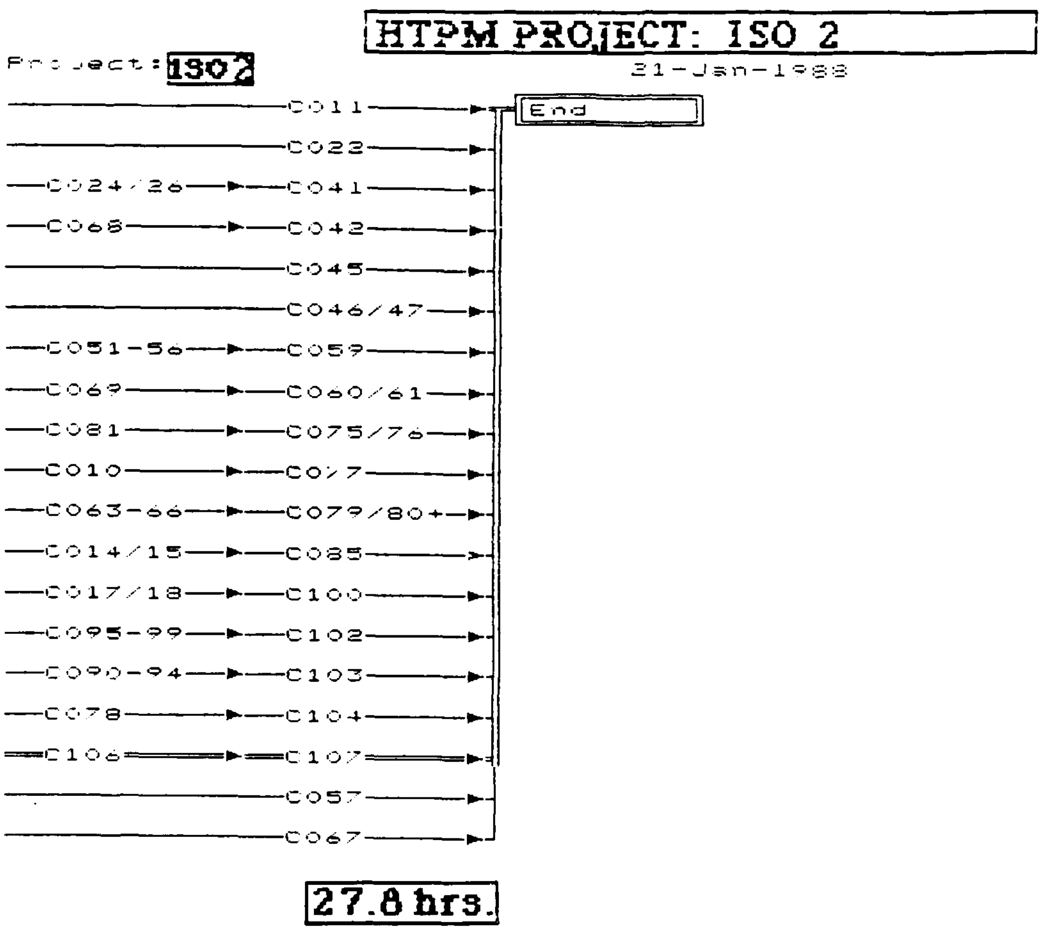

HTPM PROJECT: ISO 2
Project: ISO 2
Start
C048-50
C105
C002-9
C110-15
C001/38
C070-73
C082
C089
C016/19
C028-37
C043/44
C074/109
C116/7/8
C023
C020/21
C040/108
C062
C058
C101
Duration 27.8 hrs

Figure 10



HTPM PROJECT: ISO 2
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21-Jan-1988
End
C011
C022
C024/26
C041
C068
C042
C045
C046/47
C051-56
C059
C069
C060/61
C081
C075/76
C010
C077
C063-66
C079/80+
C014/15
C085
C017/18
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C102
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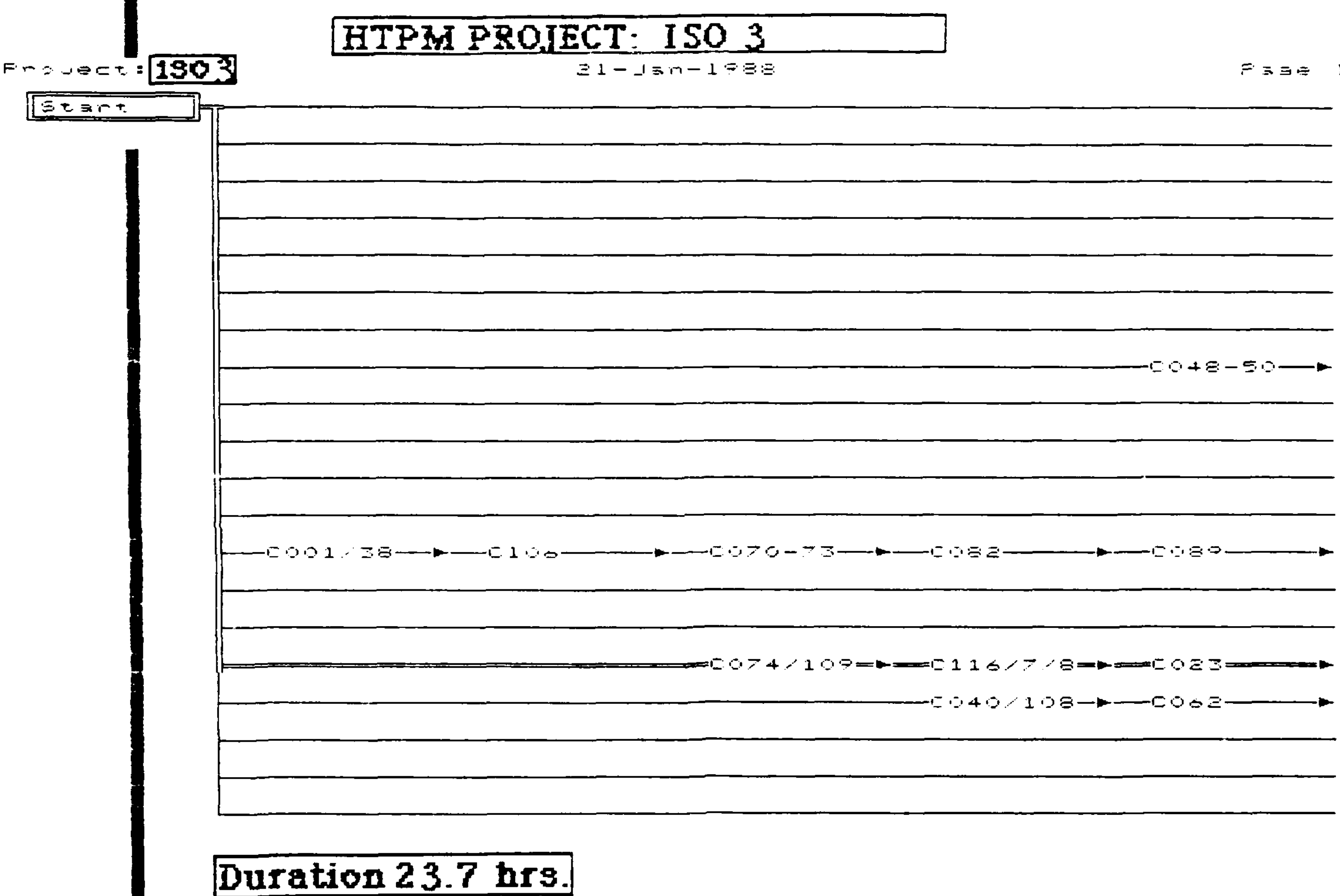
C103
C078
C104
C106
C107
C057
C067
27.8 hrs.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Project: ISO 3
21-Jan-1988
Page 1
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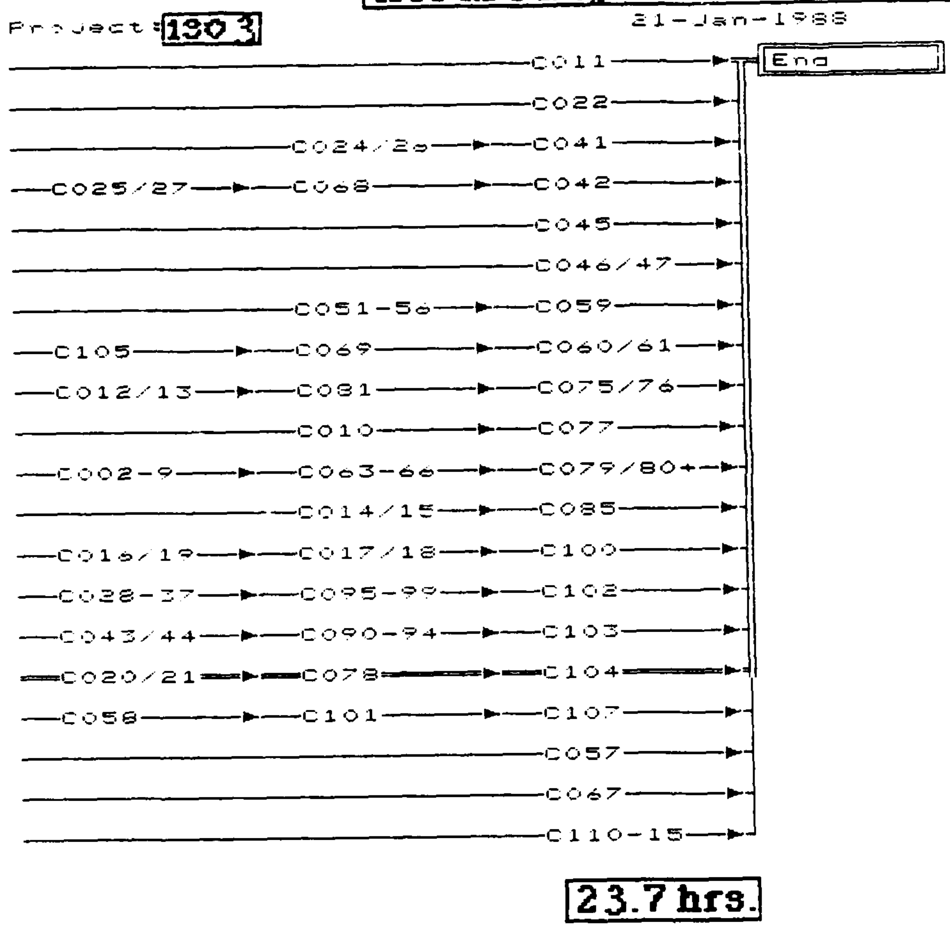
C001/38
C106
C070-73
C082
C089
C074/109
C116/7/8
C023
C040/108
C062
Duration 23.7 hrs.

Figure 11

HTPM PROJECT: ISO 3



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15. Telecon, Major James Russell, Commander, 438th Organizational Maintenance Squadron, McGuire Air Force Base, New Jersey.

16. Telecon, Lt Col. Benjamin Fallin, Headquarters Military Airlift Command, Weapons Systems Division (LGMW), Scott Air Force Base, Illinois.

APPENDICES

MAJOR

Note. Complete package is printed. — Do not add to minor. CAB

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	W/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD PER	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1010	6	NM/A	03710 02201 C001	M	B	1 MAN .5 HRS	.0				DOCK -MAJOR ISO INSPECTION IN PROGRESS IAW T.O. 1C-141B6WC-5 INFO-MAJOR ISO INSP. PKG
I2	1020	6	NM/A	03710 02201 C002	M	B	1 MAN .5 HRS	.0				DOCK -BATTERY REMOVED FOR CAPACITY CK DANGER TAG INSTALLED INFO-350 TAG NO.
I2	1030	6N	NM/A	03710 02201 C003	M	M	1 MAN .5 HRS	.0				DOCK -N/L/G INSPECTION WINDOW OPEN FOR INSP INFO-
I2	1050	6N	NM/A	03710 02201 C004	M		1 MAN .5 HRS	.0				DOCK -LT AND RT MLG INSPECTION WINDOWS OPEN FOR INSPEC TION INFO-
I2	1060	6N	NM/A	03710 02201 C005	M	B	1 MAN .5 HRS	.0				DOCK -#2 ESCAPE HATCH OPEN FOR INSPECTION INFO-
I2	1070	6N	NM/A	03710 02201 C006	M	M	1 MAN .5 HRS	.0				DOCK -#3 ESCAPE HATCH OPEN FOR INSPECTION INFO-
I2	1080	6N	NM/A	03710 02201 C007	M	B	1 MAN .5 HRS	.0				DOCK -#4 ESCAPE HATCH OPEN FOR INSPECTION INFO-
I2	1100	5A	NM/A	03710	M		1 MAN	.0				DOCK -FOUR NOSE WHEEL WELL PRESSURE PANELS (L/H AFT, R

02201 1.0 HRS /H AFT, OVAL, AND FWD) REMOVED FOR INSP
C008

INFO-

12 1110 6A NM/A 03710 M 2 MAN .0 DOCK -NOSE RADOME OPENED FOR INSP
02201 .5 HRS
C009

INFO-

12 1120 5A NM/A 03710 M 1 MAN .0 DOCK -MLG STEERING RACK COVER REMOVED FOR INSP
02201 .5 HRS
C010

INFO-

12 1140 6R NM/A 03710 M 1 MAN .0 DOCK -TAIL CONE LOWERED FOR INSP
02201 .5 HRS
C011

INFO-

12 1150 8Y NM/A 03710 M 2 MAN .0 DOCK -CENTER WING PANELS F-66, F-67, F-68, F-69, F-80,
02201 2.0 HRS F-84, F-86, F-89, F-71, F-72, F-73 REMOVED FOR INSP.
C012

INFO-

12 1160 8Y NM/A 03710 M M 1 MAN .0 DOCK -CENTER WING PANELS F-74, F-87, F-75, F-80, F-86,
02201 1.0 HRS AND 2 EACH ADF PANELS, F-94, F-95, REMOVED FOR INSP.
C013

INFO-

12 1180 5U NM/A 03710 M 1 MAN .0 OMS -LT MLG POD, APU ACCESS PANELS, 2 EA. REMOVED FOR
OMS .5 HRS INSP.
C014

INFO-BACKLINE

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN	SPS	H/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	H/P REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1190	5D	NM/A	03710 02201 C015		M		1 MAN .3 HRS	.0				DOCK -LT MLG DOOR FLAPPER DOOR ACTUATOR ACCESS PANEL REMOVED FOR INSP. INFO-
I2	12[illegible]	5D	NM/A	03710 02201 C016		M		1 MAN .5 HRS	.0				DOCK -LT MLG DOOR UPLOCK LATCH ASSY SPRING CARTRIDGE REMOVED FOR CLEAN AND LUBE INFO-
I2	1220	5F	NM/A	03710 02201 C017		M		1 MAN .5 HRS	.0				DOCK -RT MLG POD, TROOP LOX ACCESS PANEL F-44 REMOVED FOR INSP. INFO-
I2	1230	5F	NM/A	03710 02201 C018		M		1 MAN .3 HRS	.0				DOCK -RT MLG DOOR FLAPPER DOOR ACTUATOR ACCESS PANEL REMOVED FOR INSP. INFO-
I2	1250	5F	NM/A	03710 02201 C019		M		1 MAN .5 HRS	.0				DOCK -RT MLG DOOR UPLOCK LATCH ASSY SPRING CARTRIDGE REMOVED FOR CLEANING AND LUBE INFO-
I2	1260	9A	NM/A	03710 02201 C020		M		2 MAN 2.0 HRS	.0				DOCK -HORIZ. STAB PANELS HS-31, HS-33, HS-34, HS-37, HS-39, HS-45, HS-46 REMOVED FOR INSP. INFO-
I2	1270	9A	NM/A	03710 02201 C021		M		2 MAN 2.0 HRS	.0				DOCK -VERTICAL STAB PANELS VS-1, VS-5, VS-11, VS-15, VS-21, VS-23, VS-56 AND SNF 12 EACH ELEVATOR HINGE ACCESS PANELS REMOVED FOR INSP. INFO-
I2	12[illegible]	6A	NM/A	03710		M	M	2 MAN	.0				DOCK -AERIAL REFUELING SLIPWAY DOOR OPENED AND SAFTEY

				02201			.5 HRS		LOCK INSTALLED
				C022					
									INFO-
I2	1300	9A	NM/A	03710	M	M	2 MAN	.0	RADI -ELT CANNON PLUG DISCONNECTED FOR PANEL REMOVAL
				04110			.5 HRS		ELT REMOVED TO RDO SHOP
				C023					DANGER TAG INSTALLED
									INFO-350 TAG
I2	1320	1A	NM/A	03710	M		1 MAN	.0	DOCK -NO. 1 PYLON UPPER TENSION REGULATOR PANEL REMOVE
				02201			.5 HRS		D FOR INSP.
				C024					
									INFO-
I2	1330	2A	NM/A	03710	M		1 MAN	.0	DOCK -NO. 2 PYLON UPPER TENSION REGULATOR PANEL REMOVE
				02201			.5 HRS		D FOR INSP.
				C025					
									INFO-
I2	1360	1A	NM/A	03710	M		2 MAN	.0	DOCK -NO. 1 PYLON PANELS PP-16L, PP-17L,PP-24R AND
				02201			1.0 HRS		PP16R REMOVED FOR INSP
				C026					
									INFO-
I2	1370	2A	NM/A	03710	M		2 MAN	.0	DOCK -#2 PYLON PANELS PP-16L PP-17L,PP-24R AND PP-16R
				02201			1.0 HRS		REMOVED FOR INSP
				C027					
									INFO-
I2	1380	7A	NM/A	03710	M		2 MAN	.0	DOCK -LT WING NO. 2 (WRAP AROUND) PANEL R
				02201			1.0 HRS		EMOVED FOR INSP.
				C028					
									INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	W/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1390	7A	NM/A	03710 02201 C029	M		1 MAN 1.0 HRS	.0				DOCK -LT WING PANELS UW-23 & UW-35 REMOVED DURING ISO INSP. INFO-
I2	1391	7A	NM/A	03710 02201 C030	M		1 MAN 1.0 HRS	.0				DOCK -LT WING UW-37 PANEL REMOVED DURING ISO INSP. INFO-
I2	1392	1A	NM/A	03710 02201 C031	M		1 MAN 1.0 HRS	.0				DOCK -#1 & #2 "E"-POINT FAIRINGS REMOVED DURING ISO INSP. INFO-
I2	1400	7A	NM/A	03710 02201 C032	M	M	1 MAN 1.0 HRS	.0				DOCK -LT WING NO. 1 (WRAP AROUND) PANEL REMOVED FOR INSPECTION. INFO-
I2	1410	7A	NM/A	03710 02201 C033	M	M	1 MAN 1.0 HRS	.0				DOCK -LT WING 20 EACH BLOWOUT DOORS REMOVED DURING ISO INSP. INFO-
I2	1411	7A	NM/A	03710 02201 C034	M	M	1 MAN 1.0 HRS	.0				DOCK -LT WING 9 EACH FLAP CARRIAGE ACCESS PANELS OPEN DURING ISO INSP. INFO-
I2	1412	7A	NM/A	03710 02201 C035	M	M	1 MAN 1.0 HRS	.0				DOCK -LT WING 3 EACH AILERON SEAL ACCESS PANELS LOWERE D DURING ISO INSP. INFO-
I2	1413	7A	NM/A	03710	M	M	1 MAN	.0				DOCK -LT WING 3 EACH AILERON TAB SEALS LOWERED DURING

				02201			1.0 HRS			ISO INSP.
				C036						
										INFO-
I2	1414	7A	NM/A	03710	M	M	1 MAN	.0		DOCK -LT WING LANDING LIGHT PANEL OPEN DURING ISO INSP
				02201			1.0 HRS			.
				C037						
										INFO-
I2	1420	7	IM/A	03710	M	M	10 MAN	.0		DOCK -C/W ISO PREP CARDS M-001 THRU M-009
				02201			5.0 HRS			
				C038						
										INFO-
I2	1430	8Y	NM/A	03710	M	M	1 MAN	.0		DOCK -C/W I.P.I. BOTH CENTER WING LIFE RAFTS
				02201			1.0 HRS			
				C039						
										INFO-
I2	1440	6A	NM/A	03710	M	M	2 MAN	.0		DOCK -LT WING FUSELAGE PANELS F-3, F-5, F-7, F-9, F-11
				02201			2.0 HRS			, F-13, F-15, F-19, F-21, F-23, F-25, F-27, F-31, AND
				C040						F-33 REMOVED
										INFO-
I2	1470	1A	NM/A	03710	M	M	2 MAN	.0		DOCK -NO. 1 PYLON DRIP PAN REMOVED FOR INSP.
				02201			.5 HRS			
				C041						
										INFO-
I2	1480	2A	NM/A	03710	M	M	2 MAN	.0		DOCK -NO. 2 PYLON DRIP PAN REMOVED FOR INSP.
				02201			.5 HRS			
				C042						
										INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRD	H/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1490	8A	NM/A	03710 02201 C043	M	M	1 MAN 1.0 HRS	.0				DOCK -RT. WING PANELS UW-24 & UW-36 REM'D DURING ISO INSP. . INFO-
I2	1491	8A	NM/A	03710 02201 C044	M	M	1 MAN 1.0 HRS	.0				DOCK -RT. WING PANELS UW-38 REM'D DURING ISO INSP. . INFO-
I2	1492	3A	NM/A	03710 02201 C045	M	M	1 MAN 1.0 HRS	.0				DOCK -#3 & #4 PYLON "E"-POINT FAIRINGS REM'D DURING ISO INSP. INFO-
I2	1500	3A	NM/A	03710 02201 C046	M		1 MAN .5 HRS	.0				DOCK -NO. 3 PYLON UPPER TENSION REGULATOR PANEL REMOVE D FOR INSP. INFO-
I2	1510	4A	NM/A	03710 02201 C047	M		1 MAN .5 HRS	.0				DOCK -NO. 4 PYLON UPPER TENSION REGULATOR PANEL REMOVE D FOR INSP. INFO-
I2	1520	8A	NM/A	03710 02201 C048	M	M	1 MAN 1.0 HRS	.0				DOCK -RT WING NO. 3 (WRAP AROUND) PANEL R EMOVED FOR INSP. INFO-
I2	1530	3A	NM/A	03710 02201 C049	M	M	1 MAN 1.0 HRS	.0				DOCK -NO. 3 PYLON PANELS FP-16L, FP-17L,PP-24R AND FP-14R REMOVED FOR INSP INFO-
I2	1550	4A	NM/A	03710	M	M	1 MAN	.0				DOCK -NO. 4 PYLON PANELS FP-16L, FP-17L, PP-24R AND

				02201			1.0 HRS		FP-16R REMOVED FOR INSP	
				C050						
									INFO-	
I2	1570	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING NO. 4 (WRAP AROUND) PANEL REMOVED FOR INSPECTION	
				02201			1.0 HRS			
				C051						
									INFO-	
I2	1580	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING 20 EACH BLOWOUT DOORS REM'D DURING ISO INSP.	
				02201			1.0 HRS			
				C052						
									INFO-	
I2	1581	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING 9 EACH FLAP CARRIAGE PANELS OPEN DURING ISO INSP.	
				02201			1.0 HRS			
				C053						
									INFO-	
I2	1582	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING 3 EACH AILERON SEAL ACCESS PANELS LOWERED DURING ISO INSP.	
				02201			1.0 HRS			
				C054						
									INFO-	
I2	1583	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING 3 EACH AILERON TAB SEAL ACCESS PANELS LOWERED DURING ISO INSP.	
				02201			1.0 HRS			
				C055						
									INFO-	
I2	1584	8A	NM/A	03710	M	M	1 MAN	.0	DOCK -RT WING LANDING LIGHT PANEL OPEN DURING ISO INSP .	
				02201			1.0 HRS			
				C056						
									INFO-	

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	H/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1590	6L	IN/A	03710 02201 C057	M	M	2 MAN 4.0 HRS	.0				DOCK -C/W FLT STA INSP CARDS M-013 THRU M-016 INFO-
I2	1600	6R	IN/A	03710 02201 C058	M	M	2 MAN 4.0 HRS	.0				DOCK -C/W AFT FUSELAGE INSP CARDS M-025;M-036;M-037;& M-070 INFO-
I2	1610	6A	NM/A	03710 02201 C059	M	M	2 MAN 2.0 HRS	.0				DOCK -RT WING FUSELAGE PANELS F-4, F-6, F-8, F-10,, F- 12, F-14, F-16, F-18, F-20, F-22, F24, F-26, F-28, F-2 9, F-30, F-32, F-34 REMOVED FOR INSP. INFO-
I2	1640	3A	NM/A	03710 02201 C060	M	M	2 MAN .5 HRS	.0				DOCK -NO. 3 PYLON DRIP PAN REMOVED FOR INSP. INFO-
I2	1650	4A	NM/A	03710 02201 C061	M	M	2 MAN .5 HRS	.0				DOCK -NO. 4 PYLON DRIP PAN REMOVED FOR INSP. INFO-
I2	1660	6M	IN/A	03710 02201 C062	M		2 MAN 4.0 HRS	.0				DOCK -C/W FWD CARGO INSP CARDS M-017;M-026 THRU M-028 INFO-
I2	1670	1C	NM/A	03710 0323C C063	M		1 MAN .5 HRS	.0				ENGI -NO.1 ENG FWD&AFT COWLING OPEN FOR INSP INFO-
I2	1680	2C	NM/A	03710	M		1 MAN	.0				ENGI -NO.2 ENG FWD &AFT COWLING OPEN FOR INSP

				0323C		.5 HRS		
				C064				
								INFO-BACKLINE
12	1690	3C	NM/A	03710	M	1 MAN	.0	ENGI -NO.3 ENG FWD &AFT COWLING OPEN FOR INSP
				0323C		.5 HRS		
				C065				
								INFO-BACKLINE
12	1700	4C	NM/A	03710	M	1 MAN	.0	ENGI -NO.4 ENG FWD &AFT COWLING OPEN FOR INSP
				0323C		.5 HRS		
				C066				
								INFO-BACKLINE
12	1710	5D	NM/A	03710	M	1 MAN	.0	ENVI -APU FIRE BOTTLE CANNON PLUG DISCONNECTED FOR CON
				03360		.5 HRS		TINUITY CK
				C067				DANGER TAG INSTALLED
								INFO-
12	1720	1A	NM/A	03710	M	1 MAN	.0	ENVI -NO.1 PYLON FIRE BOTTLES CANNON PLUGS DISCONNECTE
				03360		.5 HRS		D FOR CONTINUITY CK
				C068				DANGER TAG INSTALLED
								INFO-
12	1730	4A	NM/A	03710	M	1 MAN	.0	ENVI -NO.4 PYLON FIRE BOTTLES CANNON PLUGS DISCONNECTE
				03360		.5 HRS		D FOR CONTINUITY CK
				C069				DANGER TAG INSTALLED
								INFO-
12	1740	5D	NM/A	03710	M	1 MAN	.0	REFR -LT MLG BELLCRANK DRIVE ASSY REMOVED FOR INSP.
				03310		1.0 HRS		
				C070				
								INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	W/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1750	5F	NM/A	03710 03310 C071	M		1 MAN 1.0 HRS	.0				REPR -RT MLG BELLCRANK DRIVE ASSY REMOVED FOR INSP INFO-
I2	1760	5D	NM/A	03710 03340 C072	M		1 MAN 1.0 HRS	.0				PNEU -LT MLG BOGIE DISCONNECTED FOR SERVICE INFO-
I2	1770	5F	NM/A	03710 03340 C073	M		1 MAN 1.0 HRS	.0				PNEU -RT MLG BOGIE DISCONNECTED FOR SERVICE INFO-
I2	1780	6N	IN/A	03710 02201 C074	M		2 MAN 4.0 HRS	.0				DOCK -C/W AFT CARGO INSP CARDS M-029 THRU M-034;EXCEPT M-034 ITEM 1D INFO-
I2	1790	8[illegible]	NM/A	03710 02201 C075	M		1 MAN 1.0 HRS	.0				DOCK -RT WING LIFE RAFT REMOVED FOR INSP COMPARTMENT DOOR OPEN INFO-
I2	1800	8[illegible]	NM/A	03710 02201 C076	M		1 MAN 1.0 HRS	.0				DOCK -LT WING LIFE RAFT REMOVED FOR INSP COMPARTMENT DOOR OPEN. INFO-
I2	1810	5A	IN/A	03710 02201 C077	M		2 MAN 4.0 HRS	.0				DOCK -C/W NLG INSP CARDS M-038 THRU M-040 INFO-
I2	1820	9A	IN/A	03710	M		2 MAN	.0				DOCK -C/W T-TAIL INSP CARDS M-071 THRU M-072

				02201		4.0 HRS		AND M-071A
				C078				
								INFO-
I2	1830	1C	IN/A	03710	M	1 MAN	.0	ENGI -NO.1 ENGINE MAJOR ISO INSPECTION DUE I/A/W
				0323C		.5 HRS		1C-141B-6WC-5. C/W INSP CARDS M-224, AND M-077 THRU M
				C079				-082.
								INFO-
I2	1860	2C	IN/A	03710	M	1 MAN	.0	ENGI -NO. 2 ENGINE MAJOR ISO INSPECTION DUE I/A/W
				0323C		.5 HRS		1C-141B-6WC-5. C/W INSP CARDS M-224, AND M-083 THRU M
				C080				-088
								INFO-
I2	1880	8Y	IN/A	03710	M	2 MAN	.0	DOCK -C/W CTR WING INSP CARDS M-018 THRU M-025
				02201		4.0 HRS		M-034 ITEM 1D
				C081				
								INFO-
I2	1890	5D	IN/A	03710	M	2 MAN	.0	DOCK -C/W LT MLG INSP CARDS M-041 THRU M-046
				02201		4.0 HRS		
				C082				
								INFO-
I2	1710	3C	IN/A	03710	M	1 MAN	.0	ENGI -NO.3 ENGINE MAJOR ISO INSPECTION DUE I/A/W/
				0323C		.5 HRS		1C-141B-6WC-5. C/W INSP CARDS M-224, M-089 THRU M-094
				C083				
								INFO-
I2	1940	4C	IN/A	03710	M	1 MAN	.0	ENGI -NO.4 ENGINE MAJOR ISO INSPECTION I/A/W
				0323C		.5 HRS		1C-141B-6WC-5. C/W INSP CARDS M-224, AND M-095 THRU M
				C084				-100
								INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	W/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	1970	5D	IN/A	03710 0323H C085	M		1 MAN .5 HRS	.0				APUS -APU COMPARTMENT INSPECTION DUE I/A/W 1C-141B-6WC-5. C/W INSP CARD M-101 INFO-
I2	1990	5D	NN/A	03710 0323H C086	M		1 MAN .5 HRS	.0				APUS -APU STARTER REMOVED TO FOM INFO-
I2	2000	5D	NN/A	03710 0323H C087	M		1 MAN .5 HRS	.0				APUS -APU STARTER CLUTCH REMOVED FOR BENCH CHECK. INFO-
I2	2080	1	IN/A	03710 03234 C088	M		1 MAN .5 HRS	.0				ENGD -ALL ENGINES NO. 6 BEARING EXTERNAL OIL STRAINER DUE LEAK CHECK. INFO-**POST DOCK**
I2	2090	5F	IN/A	03710 02201 C089	M		2 MAN 4.0 HRS	.0				DOCK -C/W RT MLG INSP CARDS M-047 THRU M-051 INFO-
I2	2110	8A	IN/A	03710 02201 C090	M		4 MAN 4.0 HRS	.0				DOCK -C/W RT WING INSP CARDS M-061 & M-062. INFO-
I2	2111	8A	IN/A	03710 02201 C091	M		4 MAN 4.0 HRS	.0				DOCK -C/W RT WING INSP CARDS M-063 & M-064. INFO-
I2	2112	8A	IN/A	03710	M		4 MAN	.0				DOCK -C/W RT WING INSP CARDS M-065.

				Q2201		4.0 HRS		
				C092				
								INFO-
I2	2120	8A	IN/A	03710	M	4 MAN	.0	DOCK -C/W RT WING INSP CARDS M-065A.
				Q2201		4.0 HRS		.
				C093				
								INFO-
I2	2121	8A	IN/A	03710	M	4 MAN	.0	DOCK -C/W RT WING INSP CARDS M-066 & M-067.
				Q2201		4.0 HRS		
				C094				
								INFO-
I2	2130	7A	IN/A	03710	M	4 MAN	.0	DOCK -C/W LT WING INSP CARDS M-052 & M-053.
				Q2201		4.0 HRS		.
				C095				
								INFO-
I2	2131	7A	IN/A	03710	M	4 MAN	.0	DOCK -C/W LT WING INSP CARDS M-054 & M-055.
				Q2201		4.0 HRS		
				C096				
								INFO-
I2	2132	7A	IN/A	03710	M	4 MAN	.0	DOCK -C/W LT WING INSP CARDS M-056.
				Q2201		4.0 HRS		
				C097				
								INFO-
I2	2140	7A	IN/A	03710	M	4 MAN	.0	DOCK -C/W LT WING INSP CARDS M-065A.
				Q2201		4.0 HRS		.
				C098				
								INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	W/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
12	2141	7A	IN/A	03710	M		4 MAN	.0				DOCK -C/W LT WING INSP CARDS M-057 & M-058.
				02201			4.0 HRS					
				C099								
												INFO-
12	2150	5D	IN/A	03710	M		1 MAN	.0				PNEU -C/W HYD MLG INSP CARDS M-127 THRU M-129
				03340			4.0 HRS					
				C100								
												INFO-
12	2160	6A	IN/A	03710	M		1 MAN	.0				PNEU -C/W HYD INT INSP CARDS M-130, M-132 THRU M-135
				03340			4.0 HRS					
				C101								
												INFO-
12	2170	7A	IN/A	03710	M		1 MAN	.0				PNEU -C/W HYD LT WING INSP CARD M-137
				03340			4.0 HRS					
				C102								
												INFO-
12	2180	8A	IN/A	03710	M		1 MAN	.0				PNEU -C/W HYD RT WING INSP CARD M-138
				03340			4.0 HRS					
				C103								
												INFO-
12	2230	9A	IN/A	03710	M	M	1 MAN	.0				PNEU -C/W HYD TAIL INSP CARD M-136
				03340			4.0 HRS					
				C104								
												INFO-
12	2240	1	IN/A	03710	M	M	1 MAN	.0				PNEU -C/W HYD PYLON INSP CARD M-131
				03340			4.0 HRS					
				C105								
												INFO-
12	2250	1	IN/A	03710	M	M	5 MAN	.0				REFR -C/W A/R INSP CARDS M-102 THRU M-117

03310 6.0 HRS

C106

INFO-

12 2260 1 IN/A 03710 M M 3 MAN .0 NDIS -C/W NDI INSP CARDS M-073 THRU M-075

03170 6.0 HRS

C107

INFO-

12 2280 6 IN/A 03710 M M 3 MAN .0 CORP -C/W CORR INSP CARDS M-142

03140 6.0 HRS

C108

INFO-

12 2290 6 IN/A 03710 M M 2 MAN .0 FUEL -C/W FUEL CELL INSP CARD M-139 THRU M-141

03320 6.0 HRS

C109

INFO-

12 2300 6 IN/A 03710 M M 4 MAN .0 ELEC -C/W ELECT INSP CARDS M-153, M-154.

04230 4.0 HRS

C110

INFO-

12 2310 6 IN/A 03710 M M 2 MAN .0 RADI -C/W RDO INSP CARD M-144 THRU M-146

04110 4.0 HRS

C111

INFO-

12 2320 6 IN/A 03710 M M 1 MAN .0 COMP -C/W COMP INSP CARD M-143

04140 4.0 HRS

C112

INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN	SRS	H/D A/T H/M	EVENT ID	JOB STND	START BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	2330	6	IN/A	03710 04120 C113	M	M		1 MAN 4.0 HRS	.0				RADA -C/W NAVX INSP CARDS M-150 THRU M-152 INFO-
I2	2340	5	IN/A	03710 04210 C114	M	M		1 MAN 4.0 HRS	.0				AUTO -C/W AUTO PILOT INSP CARD M-148 INFO-
I2	2350	6	IN/A	03710 04220 C115	M	M		2 MAN 4.0 HRS	.0				INST -C/W INST INSP CARDS M-147 AND M-149 INFO-
I2	2360	6N	IN/A	03710 03360 C116	M	M		2 MAN 4.0 HRS	.0				ENVI -C/W ECS INTERIOR INSP CARDS M-118 THRU M-120 INFO-
I2	2370	8Y	IN/A	03710 03360 C117	M	M		2 MAN 4.0 HRS	.0				ENVI -C/W ECS CTR WING INSP CARD M-121 INFO-
I2	2380	1	IN/A	03710 03360 C118	M	M		2 MAN 4.0 HRS	.0				ENVI -C/W ECS INSP CARD M-069A;M-122 THRU M-126 INFO-
I2	2390	3L	IN/A	03710 02201 C119	M	M		2 MAN 2.0 HRS	.0				DOCK -C/W FLT STA LUBE CARD M-170 INFO-
I2	2400	6N	IN/A	03710	M	M		2 MAN	.0				DOCK -C/W CARGO LUBE CARD M-171, M-172, M-223, AND M-2

				02201			2.0 HRS		25 AND M-182
				C120					
									INFO-
I2	2410	6R	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W RAMP LUBE CARDS M-174 THRU M-179 AND M-198
				02201			2.0 HRS		
				C121					
									INFO-
I2	2420	5D	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W LT MLG LUBE CARDS M-190 THRU M-197
				02201			1.0 HRS		
				C122					
									INFO-
I2	2430	5F	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W RT MLG LUBE CARD M-199 THRU M-206
				02201			1.0 HRS		
				C123					
									INFO-
I2	2440	7A	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W LT WING LUBE CARD M-207 THRU M-214
				02201			3.0 HRS		
				C124					
									INFO-
I2	2450	8A	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W RT WING LUBE CARD M-215 THRU M-221
				02201			3.0 HRS		
				C125					
									INFO-
I2	2460	5A	IN/A	03710	M	M	1 MAN	.0	DOCK -C/W NLG LUBE CARDS, M-186 THRU M-189 AND M-222
				02201			1.0 HRS		ADD: M-172 ITEM 1
				C126					
									INFO-

INSP	ITEM	WORK ZONE	DISC IND	WUC W/C JCN SRS	H/D A/T H/M	EVENT ID	START JOB STND	BASE LINE	ELEC OFF	HYD REQ	RCD ACT	DISCREPANCY VERBIAGE LISTING
I2	2470	5A	IN/A	03710 02201 C127 .	M	M	1 MAN 1.0 HRS	.0				DOCK -C/W T-TAIL LUBE CARDS M-180 THRU M-185 INFO-
I2	2480	7	IN/A	03710 02201 C128	M	M	10 MAN 6.0 HRS	.0				DOCK -C/W ISO CLOSE CARDS M-155 THRU M-161 INFO-
I2	2490	1	NM/A	03710 OMS C129	M	M	2 MAN .5 HRS	.0				OMS -ALL 4 PYLON SAIL BOAT PANELS REMOVED PRIOR TO PO ST DOCK ENG RUNS INFO-** POST DOCK **
I2	2500	1	NM/A	03710 OMS C130	M		1 MAN .3 HRS	.0				OMS -NO.1 ENG INLET DUE FOD INSP PRIOR TO RUN INFO-** POST DOCK **
I2	2510	2	NM/A	03710 OMS C131	M		1 MAN .3 HRS	.0				OMS -NO.2 ENG INLET DUE FOD INSP PRIOR TO RUN INFO-** POST DOCK **
I2	2520	3	NM/A	03710 OMS C132	M		1 MAN .3 HRS	.0				OMS -NO.3 ENG INLET DUE FOD INSP PRIOR TO RUN INFO-** POST DOCK **
I2	2530	4	NM/A	03710 OMS C133	M		1 MAN .3 HRS	.0				OMS -NO.4 ENG INLET DUE FOD INSP PRIOR TO RUN INFO-** POST DOCK **
I2	2550	4	IN/A	03710	M	M	1 MAN	.0				OMS -CK ALL ENG AND CSD OIL AFTER POST DOCK ENG RUN

APPENDIX

APPENDIX B--Manhours for McGuire ISO's (Major) Oct-Dec 87

06 JAN 88/0819 (VIRP-M379S11) MAN HRS FOR MCGUIRE ISO'S (MAJOR) OCT - DEC 87

JCN	MAN HR	JCN	MAN HR
C001	215.0	C037	36.6
C002	31.4	C038	920.8
C003	22.5	C039	4.4
C004	57.0	C040	41.0 (3) 58.2
C005	17.5	C041	53.0
C006	30.5	C042	35.1
C007	38.5	C043	10.0
C008	6.5	C044	30.8
C009	5.4	C045	22.0
C010	18.3	C046	17.8
C011	38.8	C047	13.0
C012	25.0	C048	36.0
C013	30.5	C049	35.5
C014	25.0	C050	41.0
C015	17.5	C051	30.5
C016	10.9	C052	23.0
C017	28.8	C053	26.0
C018	18.1	C054	16.5
C019	33.0	C055	12.0
C020	28.3	C056	18.4
C021	17.7	C057	253.0
C022	2.2	C058	121.8
C023	15.7	C059	47.0
C024	56.5	C060	24.2
C025	27.6	C061	13.8
C026	37.5	C062	591.1
C027	29.9	C063	13.1
C028	32.2	C064	10.1
C029	15.5	C065	11.1
C030	39.3	C066	13.3
C031	34.0	C067	83.0
C032	42.6	C068	56.5
C033	26.9	C069	42.5
C034	34.7	C070	47.4
C035	19.8	C071	25.4
C036	14.9	C072	8.0

06 JAN 88/0819 (VIRP-M379S11) MAN HRS FOR MCGUIRE ISO'S (MAJOR) OCT - DEC 87

JCN	MAN HR	JCN	MAN HR
C074	187.0	C112	71.2
C075	20.8	C113	79.5
C076	21.7	C114	170.0
C077	94.0	C115	70.1
C078	191.4	C116	73.0
C079	295.8	C117	73.0
C080	331.5	C118	94.0
C081	335.1	C119	59.0
C082	120.4	C120	162.0
C083	280.1	C121	137.9
C084	285.1	C122	51.0
C085	179.5	C123	84.5
C088	74.8	C124	257.5
C089	169.5	C125	148.5
C090	488.2	C126	83.5
C091	569.5	C127	89.8
C092	118.5	C128	763.8
C093	46.0	C129	30.0
C094	61.0	C130	5.4
C095	326.8	C131	4.5
C096	119.5	C132	4.5
C097	107.5	C133	4.7
C098	79.5	C134	13.1
C099	86.1	C135	74.5
C100	96.0	C136	24.3
C101	159.4	C137	20.3
C102	56.5	C138	27.4
C103	64.2	C139	8.0
C104	121.0	C140	11.0
C105	59.9	C141	76.0
C106	296.0	C142	8.2
C107	442.0	C143	6.5
C108	155.0	C144	42.5
C109	187.1	C145	43.0
C110	114.8	C146	44.0
C111	159.1	C147	11.0

APPENDIX

APPENDIX C--Manhour Summary, Random ISO, Aircraft 157

868 hrs.

SRD	WUC	PWC	T M	UNIT	HOURS	ID NBR	START HOUR	DAY PROC	C S	C L	JCN	ID
AM6	03710	Q2201	P	0	.5	QA0133	133	307	1	1	306C016	A
AM6	03710	Q2201	P	0	9.0	QA0133	073	307	3	1	306C057	A
AM6	03710	Q2201	P	0	6.0	QA0133	133	307	2	1	306C094	A
AM6	03710	Q2201	P	0	1.0	QA0133	010	307	1	1	306C221	A
AM6	03710	Q323C	P	0	16.0	QA0133	073	307	2	1	306C079	A
AM6	03710	Q2201	P	0	3.5	QA0133	073	307	1	1	306C078	A
AM6	03710	Q3170	P	0	16.0	QA0133	080	307	2	1	306C107	A
AM6	03710	Q2201	P	0	.9	QA0133	000	307	1	1	306C081	A
AM6	03710	Q3170	P	0	16.0	QA0133	080	307	2	1	306C107	A
AM6	03710	R2201	P	0	1.0	QA0133	073	307	1	3	306C098	A
AM6	03710	R3170	P	0	8.0	QA0133	080	307	1	3	306C107	A
AM6	03710	R2201	P	0	3.0	QA0133	083	307	1	3	306C096	A
AM6	03710	Q2201	P	0	1.0	QA0133	210	307	1	1	306C031	A
AM6	03710	Q3360	P	0	2.0	QA0133	120	308	2	3	306C117	A
AM6	03710	Q3310	P	0	2.0	QA0133	143	309	2	1	306C145	A
AM6	03710	R2201	P	0	6.0	QA0157	093	317	1	3	316C195	A
AM6	03710	Q2201	P	0	3.0	QA0157	073	317	2	1	316C180	A
AM6	03710	R2201	P	0	6.0	QA0157	093	317	1	3	316C037	A
AM6	03710	R2201	P	0	.5	QA0157	073	317	1	3	3143930	A
AM6	03710	R2201	P	0	6.0	QA0157	093	317	1	3	316C095	A
AM6	03710	Q2201	P	0	2.0	QA0157	083	317	2	1	316C061	A
AM6	03710	Q2201	P	0	4.0	QA0157	073	317	2	1	316C144	A
AM6	03710	R2201	P	0	.5	QA0157	080	317	1	3	3143931	A
AM6	03710	Q2201	P	0	1.0	QA0157	103	317	2	1	316C177	A
AM6	03710	R2201	P	0	4.0	QA0157	073	317	2	3	316C053	A
AM6	03710	R2201	P	0	1.0	QA0157	083	317	1	3	316C018	A
AM6	03710	R2201	P	0	2.0	QA0157	093	317	2	3	316C092	A
AM6	03710	Q2201	P	0	2.0	QA0157	130	317	2	1	316C041	A
AM6	03710	R2201	P	0	.1	QA0157	074	317	1	3	316C022	A
AM6	03710	Q2201	P	0	7.0	QA0157	073	317	2	1	316C183	A
AM6	03710	R2201	P	0	.2	QA0157	073	317	1	3	316C157	A
AM6	03710	R2201	P	0	7.0	QA0157	120	317	2	3	316C176	A
AM6	03710	R2201	P	0	.2	QA0157	094	317	1	3	316C174	A
AM6	03710	R2201	P	0	.3	QA0157	093	317	1	3	316C173	A
AM6	03710	R2201	P	0	6.0	QA0157	093	317	1	3	316C275	A
AM6	03710	Q2201	P	0	.5	QA0157	090	317	1	1	316C191	A
AM6	03710	Q2201	P	0	.5	QA0157	110	317	1	3	316C055	A
AM6	03710	Q2201	P	0	.5	QA0157	143	317	1	1	3143940	A
AM6	03710	R2201	P	0	2.0	QA0157	123	317	2	3	316C172	A
AM6	03710	Q2201	P	0	1.3	QA0157	163	316	1	2	316C011	A
AM6	03710	R2201	P	0	.5	QA0157	153	316	1	3	3143924	A
AM6	03710	R2133	P	0	1.0	QA0024	060	315	1	1	313C132	A

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AM6	03710	Q2201	P	0	.5	QA0157	083	317	1	1	316C147	A
AM6	03710	Q2201	P	0	.5	QA0157	093	317	1	3	316C193	A
AM6	03710	Q2201	P	0	.5	QA0157	150	317	1	1	316C156	A
AM6	03710	Q2201	P	0	.0	QA0157	161	317	1	1	316C008	A
AM6	03710	Q2201	P	0	.5	QA0157	093	317	1	1	316C016	A
AM6	03710	Q2201	P	0	1.5	QA0157	080	317	1	3	316C045	A
AM6	03710	Q2201	P	0	.5	QA0157	143	317	1	1	316C178	A
AM6	03710	Q2201	P	0	3.0	QA0157	073	317	1	1	316C012	A
AM6	03710	Q2201	P	0	.5	QA0157	100	317	1	1	316C015	A
AM6	03710	Q2201	P	0	1.0	QA0157	100	317	1	3	316C043	A
AM6	03710	Q2201	P	0	.3	QA0157	150	317	1	1	3143938	A
AM6	03710	Q2201	P	0	.3	QA0157	160	317	1	1	3143924	A
AM6	03710	Q2201	P	0	1.0	QA0157	120	317	1	1	3143927	A
AM6	03710	Q2201	P	0	18.0	QA0157	120	317	4	1	3143939	A
AM6	03710	R2201	P	0	10.0	QA0157	110	317	2	3	316C218	A
AM6	03710	Q2201	P	0	6.0	QA0157	103	317	1	1	316C013	A
AM6	03710	Q2201	P	0	.5	QA0157	130	317	1	1	3143926	A
AM6	03710	Q2201	P	0	7.5	QA0157	073	317	1	3	316C062	A
AM6	03710	Q2201	P	0	.5	QA0157	133	317	1	1	3143937	A
AM6	03710	Q2201	P	0	.5	QA0157	153	317	1	1	3143923	A
AM6	03710	Q2201	P	0	.5	QA0157	103	317	1	1	3143928	A
AM6	03710	Q2201	P	0	.5	QA0157	150	317	1	3	316C005	A
AM6	03710	R2201	P	0	12.0	QA0157	123	317	3	3	316C030	A
AM6	03710	Q2201	P	0	.5	QA0157	130	317	1	1	316C179	A
AM6	03710	R2201	P	0	2.0	QA0157	093	317	1	3	316C089	A
AM6	03710	Q2201	P	0	4.5	QA0157	120	317	1	1	316C167	A
AM6	03710	Q2201	P	0	.5	QA0157	160	317	1	1	316C186	A
AM6	03710	Q2201	P	0	.5	QA0157	150	317	1	1	316C154	A
AM6	03710	R2201	P	0	2.0	QA0157	120	317	1	3	316C017	A
AM6	03710	Q2201	P	0	2.5	QA0157	083	317	1	1	316C168	A
AM6	03710	R2201	P	0	1.4	QA0157	144	317	2	3	316C171	A
AM6	03710	Q2201	P	0	.5	QA0157	123	317	1	1	3143935	A
AM6	03710	Q2201	P	0	.5	QA0157	143	317	1	1	316C153	A
AM6	03710	Q2201	P	0	1.0	QA0157	140	317	2	1	3143925	A
AM6	03710	Q2201	P	0	1.0	QA0157	120	317	1	1	316C152	A
AM6	03710	Q2201	P	0	2.0	QA0157	140	317	2	1	316C054	A
AM6	03710	Q2201	P	0	1.0	QA0157	163	317	2	2	316C044	A
AM6	03710	Q2201	P	0	.5	QA0157	103	317	1	1	316C056	A
AM6	03710	R2201	P	0	1.0	QA0157	150	317	1	3	316C199	A
AM6	03710	Q2201	P	0	1.0	QA0157	120	317	1	3	316C052	A
AM6	03710	R2201	P	0	6.0	QA0157	130	317	2	3	316C128	A
AM6	03710	Q2201	P	0	24.0	QA0157	153	317	3	1	316C091	A
AM6	03710	Q2201	P	0	2.5	QA0157	073	316	1	1	316C081	A
AM6	03710	Q2201	P	0	9.0	QA0157	073	316	2	1	316C091	A
AM6	03710	R2201	P	0	6.0	QA0157	073	316	2	3	316C092	A
AM6	03710	Q2201	P	0	8.0	QA0157	153	317	1	3	316C091	A
AM6	03710	Q2201	P	0	4.5	QA0157	073	316	1	1	316C058	A
AM6	03710	Q2201	P	0	3.5	QA0157	073	316	1	1	316C096	A
AM6	03710	Q3170	P	0	16.0	QA0157	080	316	2	1	316C107	A
AM6	03710	R2201	P	0	8.0	QA0157	153	317	1	3	316C091	A
AM6	03710	Q2201	P	0	3.5	QA0157	073	316	1	1	316C077	A
AM6	03710	R2201	P	0	6.0	QA0157	123	316	3	3	316C097	A
AM6	03710	R2201	P	0	2.0	QA0157	103	316	2	3	316C093	A
AM6	03710	Q2201	P	0	72.0	QA0157	153	317	9	1	316C091	A
AM6	03710	R3110	P	0	.5	QA0157	073	316	1	3	316C222	A
AM6	03710	R2201	P	0	8.0	QA0157	073	316	2	3	316C057	A
AM6	03710	Q2201	P	0	.8	QA0157	143	316	1	1	316C076	A
AM6	03710	Q2201	P	0	.5	QA0157	140	317	1	1	316C688	A
AM6	03710	R2201	P	0	2.0	QA0157	073	316	1	3	316C220	A
AM6	03710	Q2201	P	0	7.5	QA0157	080	316	1	3	316C062	A
AM6	03710	Q2201	P	0	6.0	QA0157	073	316	2	1	316C215	A
AM6	03710	Q2201	P	0	.5	QA0157	130	317	1	1	316C351	A
AM6	03710	R2201	P	0	22.2	QA0157	000	316	3	2	316C038	A
AM6	03710	R2201	P	0	16.0	QA0157	073	316	2	3	316C074	A
AM6	03710	Q2201	P	0	1.2	QA0157	151	316	1	1	316C075	A
AM6	03710	Q2201	P	0	.5	QA0157	123	317	1	1	316C170	A
AM6	03710	Q2201	P	0	37.0	QA0157	000	316	5	1	316C038	A
AM6	03710	Q2201	P	0	3.0	QA0157	100	316	3	1	316C094	A
AM6	03710	Q2201	P	0	1.0	QA0157	103	316	2	1	316C003	A
AM6	03710	Q2201	P	0	.5	QA0157	120	317	1	1	316C059	A
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AM6	03710	Q2201	P	0	6.0	QA0157	120	316	3	1	316C121	A
AM6	03710	R2201	P	0	4.0	QA0157	120	316	2	3	316C119	A
AM6	03710	Q2201	P	0	.2	QA0157	162	317	1	1	316C010	A
AM6	03710	Q4210	P	0	.6	QA0157	211	317	3	1	316C138	A
AM6	03710	Q2201	P	0	8.0	QA0157	073	316	2	3	316C090	A
AM6	03710	R2201	P	0	8.0	QA0157	073	316	2	3	316C099	A
AM6	03710	R2201	P	0	2.5	QA0157	120	316	1	3	316C123	A
AM6	03710	Q2201	P	0	1.5	QA0157	073	316	1	1	316C217	A
AM6	03710	R2201	P	0	4.0	QA0157	073	316	1	3	316C089	A
AM6	03710	Q2201	P	0	1.0	QA0157	090	316	1	1	316C216	A
AM6	03710	R2201	P	0	2.3	QA0157	120	316	1	3	316C095	A
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AM6	03710	Q4210	P	0	10.0	QA0157	073	316	2	1	316C114	A
AM6	03710	Q2201	P	0	1.0	QA0157	100	316	1	1	316C221	A
AM6	03710	R2201	P	0	7.5	QA0157	140	316	3	3	316C098	A
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AM6	03710	Q2201	P	0	24.0	QA0157	073	316	3	1	316C181	A
AM6	03710	Q2201	P	0	4.5	QA0157	120	316	1	1	316C127	A
AM6	03710	Q4230	P	0	8.0	QA0157	073	316	2	1	316C110	A
AM6	03710	Q2201	P	0	3.0	QA0157	093	316	2	1	316C219	A
AM6	03710	Q323C	P	0	16.0	QA0157	073	316	2	1	316C083	A
AM6	03710	Q2201	P	0	3.5	QA0157	073	316	1	1	316C078	A
AM6	03710	Q4230	P	0	8.0	QA0157	073	316	2	3	316C110	A
AM6	03710	Q2201	P	0	4.0	QA0157	073	316	2	1	316C218	A
AM6	03710	Q2201	P	0	4.5	QA0157	150	316	3	1	316C002	A
AM6	03710	R3170	P	0	8.0	QA0157	080	316	1	3	316C107	A
AM6	03710	Q4110	P	0	4.0	QA0157	073	316	1	3	316C111	A
AM6	03710	Q2201	P	0	3.0	QA0157	093	316	2	1	316C219	A
AM6	03710	Q323C	P	0	16.0	QA0157	073	316	2	3	317C079	A
AM6	03710	Q2201	P	0	.3	QA0157	130	316	1	1	316C164	A
AM6	03710	Q2201	P	0	1.5	QA0157	120	316	1	1	316C122	A
AM6	03710	Q2201	P	0	16.0	QA0157	073	316	2	1	316C125	A
AM6	03710	Q2201	P	0	12.0	QA0157	073	316	3	1	316C006	A
AM6	03710	Q2201	P	0	.0	QA0157	131	316	1	1	316C161	A
AM6	03710	Q2201	P	0	3.5	QA0157	073	316	1	1	316C082	A
AM6	03710	Q2201	P	0	16.0	QA0157	073	316	2	1	316C124	A
AM6	03710	Q3320	P	0	15.0	QA0157	080	316	2	3	316C109	A
AM6	03710	Q3170	P	0	3.0	QA0157	130	316	1	1	316C107	A
AM6	03710	Q2201	P	0	8.0	QA0157	073	316	1	1	316C120	A
AM6	03710	R3140	P	0	5.5	QA0157	100	316	1	3	316C108	A
AM6	03710	Q2201	P	0	12.0	QA0157	113	316	3	1	316C007	A
AM6	03710	Q2201	P	0	.4	QA0157	132	316	1	1	316C160	A
AM6	03710	Q2201	P	0	.5	QA0157	123	316	1	1	316C126	A
AM6	03710	Q3140	P	0	5.5	QA0157	100	316	1	1	316C108	A
AM6	03710	Q4140	P	0	1.0	QA0157	073	316	1	1	316C112	A
AM6	03710	Q2201	P	0	.3	QA0157	134	316	1	1	316C159	A
~~AM6~~	~~03710~~	~~Q2201~~	~~P~~	~~0~~	~~.5~~	~~QA0157~~	~~163~~	~~316~~	~~1~~	~~2~~	~~316C166~~	~~A~~
AM6	03710	R2201	P	0	2.1	QA0157	141	316	3	1	316C439	A
AM6	03710	R2201	P	0	1.0	QA0157	150	316	2	3	316C175	A
AM6	03710	Q4120	P	0	3.0	QA0157	080	316	1	1	316C113	A
AM6	03710	R2201	P	0	.4	QA0157	154	316	2	3	316C150	A
AM6	03710	Q3360	P	0	2.0	QA0157	130	316	2	3	316C117	A
AM6	03710	R2201	P	0	.6	QA0157	153	316	2	3	316C151	A
AM6	03710	Q3340	P	0	8.0	QA0157	073	316	2	3	316C101	A
AM6	03710	R2201	P	0	.5	QA0157	143	316	1	3	316C019	A
AM6	03710	Q3360	P	0	6.0	QA0157	073	316	2	3	316C118	A
AM6	03710	R2201	P	0	.5	QA0157	150	316	1	3	316C148	A
AM6	03710	Q3360	P	0	4.0	QA0157	073	316	2	1	316C116	A
AM6	03710	Q4220	P	0	.5	QA0157	181	316	1	1	316C201	A
AM6	03710	Q3360	P	0	2.0	QA0157	083	317	2	1	316C068	A
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AM6	03710	Q3310	P	0	27.5	QA0157	073	317	5	1	316C10[illegible]	A
AM6	03710	Q2201	P	0	1.0	QA0157	163	316	1	1	316C025	A
AM6	03710	Q3360	P	0	2.0	QA0157	073	317	2	1	316C067	A
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AM6	03710	Q2201	P	0	1.0	QA0157	163	316	1	1	316C027	A
AM6	03710	Q4220	P	0	3.0	QA0157	161	316	1	1	316C115	A
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AM6	03710	Q3310	P	0	5.0	QA0157	133	317	2	1	316C071	A
AM6	03710	Q2201	P	0	1.0	QA0157	173	316	1	1	316C190	A
AM6	03710	Q2201	P	0	1.0	QA0157	183	316	1	1	316C198	A
AM6	03710	Q323H	P	0	8.0	QA0157	073	329	1	1	316C085	A
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AM6	03710	Q4230	P	0	1.5	QA0157	163	316	1	1	316C573	A
AM6	03710	Q2201	P	0	1.0	QA0157	193	316	1	1	316C032	A
AM6	03710	Q323C	P	0	8.0	QA0157	073	317	1	1	316C079	A
AM6	03710	Q3310	P	0	5.0	QA0157	133	317	2	1	316C070	A
AM6	03710	Q2201	P	0	1.5	QA0157	183	316	1	1	316C028	A
AM6	03710	Q2201	P	0	1.0	QA0157	203	316	1	1	316C189	A
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AM6	03710	R323C	P	0	16.0	QA0157	073	316	2	3	316C080	A
AM6	03710	Q2201	P	0	1.0	QA0157	213	316	1	1	316C024	A
AM6	03710	Q3310	P	0	.5	QA0157	150	317	1	1	316C143	A
AM6	03710	R3340	P	0	1.0	QA0157	120	317	1	3	316C212	A
AM6	03710	R323C	P	0	16.0	QA0157	073	316	2	3	316C080	A
AM6	03710	Q2201	P	0	1.0	QA0157	223	316	1	1	316C026	A
AM6	03710	Q3310	P	0	.5	QA0157	153	317	1	1	316C142	A
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AM6	03710	Q323C	P	0	16.0	QA0157	073	316	2	1	316C084	A
AM6	03710	Q2201	P	0	.5	QA0157	233	316	1	1	316C042	A
AM6	03710	Q3310	P	0	2.5	QA0157	133	317	1	1	316C135	A
AM6	03710	Q3340	P	0	3.0	QA0157	080	317	2	1	316C105	A
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AM6	03710	Q3340	P	0	3.0	QA0157	110	317	2	1	316C103	A
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AM6	03710	Q3340	P	0	3.0	QA0157	093	317	2	1	316C102	A
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AM6	03710	R3340	P	0	4.0	QA0157	073	317	1	3	316C100	A
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AM6	03710	Q3360	P	0	2.0	QA0157	093	317	2	1	316C069	A